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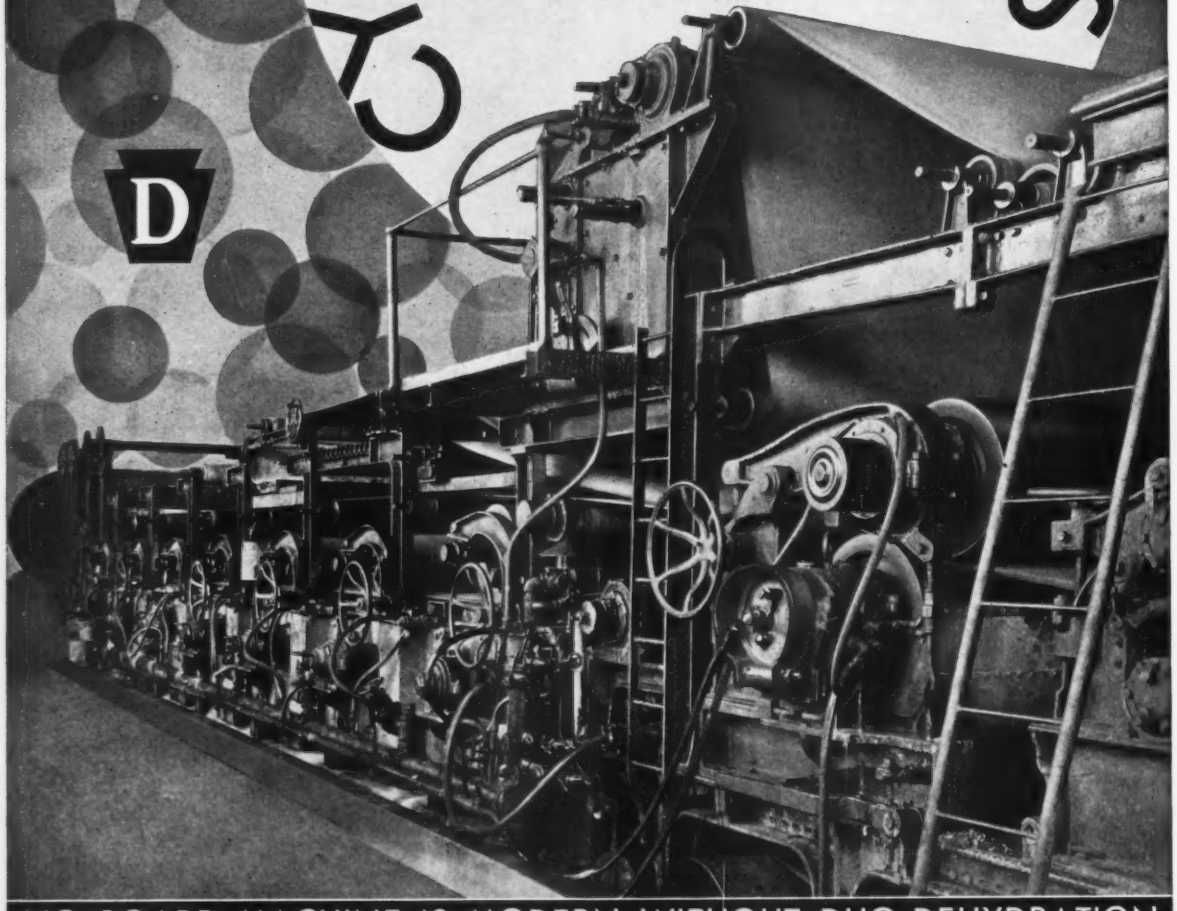

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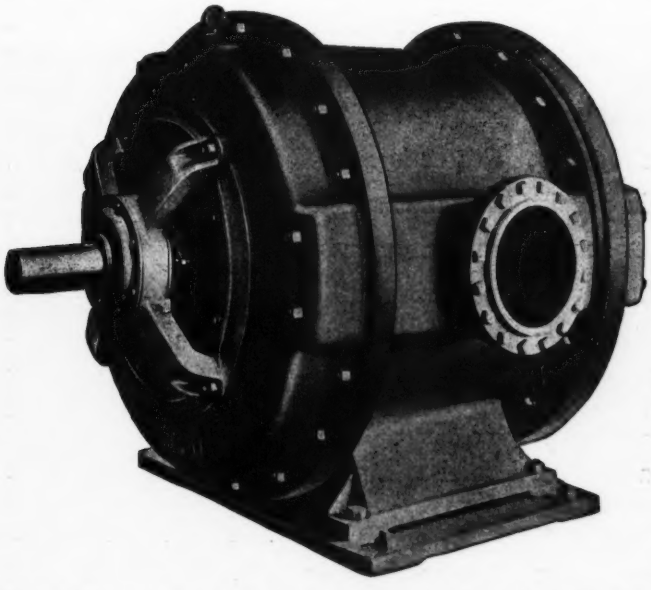

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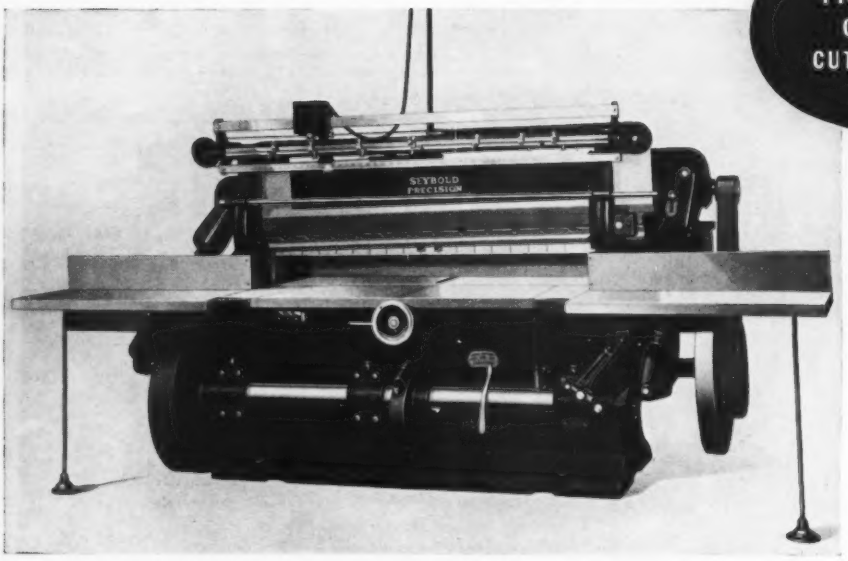

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Wisconsin May Have Private Power Project

Denial of P.W.A. Grant For Construction of Reservoirs and Power Plants Along Wisconsin River May Result In Privately Financed Development— Ulco Proost of Holland Visits Consolidated Plant — Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 3, 1938—Although Wisconsin's $26,000,000 power development project has been shelved by Secretary Ickes at Washington because smaller projects have absorbed most of the state's PWA allotment, George W. Mead, president of the Consolidated Water Power and Paper Company, and other promoters of the venture have not given up the idea of constructing the reservoirs, dams and power plans along the Wisconsin River. The Little Eau Pleine reservoir, key to the entire project, originally was contemplated by the Wisconsin Valley Improvement Company of which Mr. Mead is president, and if funds are obtainable, this work may go on just the same. The reservoir would impound flood waters of the Wisconsin for uniform power flowage, and also permit added water supply for power dams on the Fox River by means of a canal at Portage, Wis.

In an address at Wisconsin Rapids, recently, Gov. Philip F. La Follette, who has given the state's wholehearted backing to the project, expressed the hope some means may be found to overcome refusal of the government to provide the PWA grant and a loan from the RFC. He pointed out the project would not cost the taxpayers a penny, because revenues from water power users and the hydro-electric plants to be built at three locations would make it self-liquidating.

George W. Mead Long Favored Project

This venture is a dream of many years of President Mead of Consolidated, who visioned it as a privately owned power empire. However, when the problem of capital arose and the State of Wisconsin was willing to take it over under a proposed Wisconsin Hydro Authority, he expressed his willingness to turn over the plans, permits and most of the flowage rights necessary to complete the system. All statistical data, blueprints and other information as well as the personal counsel of Consolidated engineers were made available at hearings. Some of the needed land was bought as long as thirteen years ago, and the Mead interests have spent approximately $2,000,000 acquiring the property as well as keeping up the taxes. These expenditures included acreage for the Little Eau Pleine reservoir, and sites at Knowlton, Petenwell and Germantown for hydro-electric plants. Applications have already been made by Consolidated to construct the dams. If the Little Eau Pleine reservoir and the Petenwell dam, chief factors in flood control, are built separately, their cost would be from ten to twelve million dollars.

The Wisconsin Rapids Community Club has gone on record by resolution urging senators and congressmen from Wisconsin to continue efforts to obtain federal funds because of the combined benefits of employment for a large number of men, and the industrial development that will ensue by virtue of cheap power.

Continued rains have raised the level of the Wisconsin and Fox Rivers to an abnormal point, and the flood gates are wide open to prevent flooding, damage to mill basements and possible shutdowns. This situation is pointed to as an example of the need of the reservoir system.

Holland Paper Maker Visits Wisconsin

Ulco Proost of Amsterdam, Holland, a member of the three hundred-year-old firm of P. Proost & Zoon, spent a week end in September at the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., studying operation of the Consolidated coating invention which permits the making of coated paper entirely in one operation. His firm recently bought the rights for Holland, and expects to have the first of its machines in operation within six months.

Four generations of the Proost family have operated this organization since its start in 1742 in the business of book binding and publishing of Bibles and hymn books. The company not only manufactures paper today in several mills, but carries on a large wholesale paper trade and export business with branches in all the colonies of Holland. Yet the company is still operated as it was at the beginning as a private concern.

Pending outcome of the war situation in Europe, Mr. Proost planned to attend the sessions of the International Scientific Management Congress in Washington, D. C., but was prepared to sail immedi-

(Continued on page 22)

Midwest Paper Trade Expects Upward Trend

Basic Conditions Reported As Favorable For Improvement In Chicago Paper Market — Waste Paper Market Unchanged—S.A.P.I. Golf Prize Winners—Strike In Wall Paper Mills Is Averted — Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., October 3, 1938—While the European war crisis scare is admitted to have imparted a somewhat firmer tone to the raw material market it has worked, locally, to retard what was expected to be a fall development of unusual importance. The local paper trade finds retail demand quiet and a noticeable dampening of August optimism over "after Labor Day" developments. The fundamentals, however, remain as they were and Chicago executives now are expecting the forward move in general business which should be enough to materially speed up operations in the paper industry. The ten days or two weeks of international excitement failed, however, to disturb the firmness of the local markets. Sulphite bonds were steady with demand fair while the entire fine paper line continued to exude a fair measure of optimism. Books and covers marked time with here and there a reported broadening in demand. Krafts were reported more steady with prospects for an even more firm situation in the near future. Paperboard reports indicated an improved position with fall demand showing signs of developing more rapidly. The waste paper market was a laggard in local reports with the situation quoted as "somewhat soft".

Local comments indicate that the waste paper situation in Chicago continues virtually unchanged with mills reported to be taking most of the available stock of news, mixed and corrugated. Accumulations of these grades are said to be not overly large and current mill requirements are comparable to those in August which represented a substantial improvement over the preceding months.

S.A.P.I. Golf Winners

The wind-up golf outing of the midwest division, Salesmens Association of the Paper Industry took on a national aspect as the 130 contestants represented most of the major centers of the country. The occasion was tied in with the Fall Meeting of the National Paper Trade Association and, according to participants was a highlight of the entertainment features of the session. Graham Olson, chairman of the golf committee, listed the following prize winners: blind bogey, E. Vana, International Tag & Sales Book Company; first low gross, Robert Cochrane, Orchard Paper Company; second low gross, W. Hillborn; first low net, 17 and under, C. P. Orchard, Orchard Paper Company; second low net, 17 and under, R. Whitelaw, J. W. Butler Company; third low net, 17 and under, A. V. Pleasance; first low net, 18 and over, M. T. Fortney, J. W. Butler Paper Company; second, Frank Foley, Blandin Paper Company; third, George Brown; fourth, H. C. Rogers, Minneapolis Paper Company; fifth, S. Hammer; sixth, Jack Sterling, Rexford Paper Company; seventh, Jim Conley, Fraser Industries; eighth, C. T. Roos, National Envelope Company; low putts first nine, A. L. Brown, Brown Paper Goods Company; second low putts first nine, Jack Allen and L. J. Doyle; low putts second nine, E. Vana, second low putts, F. I. Prentiss, H. S. Daniels and Cromwell Jones.

Low net foursome honors went to W. Hillborn, R. Whitelaw, Gregg Frelinger and R. C. Swan while second honors went to Hamilton Vose, F. W. Cole, F. Webb and A. V. Pleasance. The high gross foursome was composed of A. N. Forsythe, John Loughrin, R. H. Roueche and C. L. Buchanan.

Good fellowship prizes, for guests only and drawn by lots went to the following: Eric Rohrer, Bermingham & Prosser; George Lebert, Dayton; John Stobbe, Blunden-Lyon; Al Brown, Brown Paper Goods; George Brown; Bert Tucker, Parker, Thomas & Tucker; Cromwell Jones, Seaman Paper Company; Gregg Frelinger, Butler Paper Corporation; Bob Halford, Dayton; F. H. Leahey, LaSalle Paper Company; Ross A. Fife, Gummed Industries, Inc., Hank Fulton, Blunden-Lyon Company; Hank Struble, Berkshire Paper Company; Robert Seybold, Seybold Paper Company and Frank M. Johnson, Midland Paper Company.

Strike In Wall Paper Mills Averted

A situation which might have had serious effects on the paper industry was averted this week when the national executive board of the United Wallpaper Craftsmen and Workers of North America agreed to suspend a nation-wide strike pending a conference with the manufacturers representative in New York City. The strike is reported to have been postponed temporarily after the manufacturers conceded a closed shop for craftsmen and a preferential shop for unskilled workers. These were two of the union's chief demands. Other points in dispute, to be taken up with the Wallpaper Institute of America, include a new contract, vacations with pay and seniority rights. The union represents about 6000 workers chiefly in New York and Illinois, the latter center being the city of Joliet.

Parker, Thomas & Tucker in New Quarters

The "trial by fire" has been of real benefit to Parker, Thomas & Tucker, local paper firm, which this week moved back into reconditioned offices and warehouse space after a ten weeks absence necessitated by a destructive fire the early part of July. The newly decorated quarters at 520 S. Canal Street are very attractive what with new furniture, equipment, fire-proof desks and a stock of new paper in the usual assortment of grades and sizes. Edward J. Schmidt is president of the company. He had the pleasure of presiding at the ceremonies on September 12 which marked the return to permanent quarters and which indicated, through telegrams and floral offerings, the esteem with which the company is held throughout the paper industry.

S.A.P.I. Directory Lists New Members

The midwest division of the Salesmens Association

of the Paper Industry starts off the Fall season with a new edition of its famous directory prepared by George K. Gibson, national membership chairman. The "new edition" simply consists of revised sheets of the "A to Z" loose leaf binder, the revisions containing the names of new members. A total of 296 individual members are listed in the complete book as revised, as well as the names of the past Presidents and a statement concerning the employment service provided by the Association.

Paper Trade Interested in Stationers' Meeting

Two meetings, one to be held next week and one just completed, have been holding the attention of the paper industry despite the fact that they are not directly related to the trade. The first of these, the National Stationers Congress, was featured by excellent exhibits of industries affiliated with the trade and by the local appearance of Senator Joseph O'Mahoney whose National Economic Council is preparing to make a survey of the development and effect of monopolies in this country.

Dilts Units in Grand Rapids Mill

The Dilts Machine Works of Fulton, N. Y., is installing several new units in the American Box Board Company at Grand Rapids, Mich. American Box Board is currently engaged in a $250,000 expansion and modernization program which calls for a revamping of one mill for the manufacture of light colored box board for the carton trade. This is a field hitherto not supplied by this company.

For stock preparation, Dilts is installing a complete system, consisting of a 100 ton Breaker Beater with Braced Bar Roll, Settling Trough, Classifiner, Rag Catcher, two Thickeners and pumps to service the entire installation.

In addition to improvements on their stock preparation system, this company is also making major improvements on their two cylinder board machines and Fourdrinier Straw machine. These changes include new fan pumps, new stock and circulating pumps and, in addition, ahead of each of their 13 vats they will install one of the new Dilts-built Vertical Cowles Classifiners for final screening. Installation of the 13 Vertical Classifiners will result in approximately 75% savings in floor space over that taken by the present flat screens. Due to the compact arrangement of this battery of Classifiners, the piping system is greatly simplified.

A new boiler costing $110,000 has also been installed in this plant to complete their modernization program. With these improvements and the installation of the Dilts equipment, this plant is greatly increasing their capacity and the flexibility of the Dilts equipment will assure maximum production.

Paper Testing Instruments

In Bulletin M-382 issued by Thwing-Albert Instrument Company, 3339-41 Lancaster avenue, Philadelphia, Pa., the company states all Thwing-Albert testing instruments are made to conform to the technical and physical requirements of the industry as specified by The Technical Association of the Pulp and Paper Industry, and the American Society for Testing Materials.

U. S. Pulp and Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 5, 1938—The Department of Commerce has just announced a new publication on the "United States Pulp and Paper Industry" prepared by its pulp and paper section.

In addition to its value to students, teachers, etc., the pamphlet is designed, through its table of reference data, to provide the pulp and paper manufacturer, the importer and the exporter, with production, import and export facts. Much of the data is carried back on a comparative basis to 1899.

The new publication carries chapters on the history of the industry, its economic status, its location, manufacturing methods, distribution methods, foreign trade, etc. Its tables show pulpwood consumption, wood pulp and paper production, wood pulp imports by type and country of origin, and imports of newsprint and other types of paper. They also show exports of many of the same items.

The Commerce Department was assisted in this work by an Advisory Committee of the paper industry including the following: R. S. Kellogg, Secretary of the Newsprint Service Bureau; Charles W. Boyce, Executive Secretary of the American Paper and Pulp Association; O. M. Porter, Secretary-treasurer, United States Pulp Producers Association; Grafton Whiting, of the National Paperboard Association; W. B. Bullock, Manager, Import Committee of the American Paper Industry; A. H. Chamberlain, Executive Secretary of the National Paper Trade Association; J. H. Londergan, Assistant Secretary of the National Paper Trade Association; and R. G. Macdonald, Secretary of the Technical Association of the Pulp and Paper Industry.

The publication, Trade Promotion Series No. 182, is for sale by the Superintendent of Documents, Washington, D. C., at 15 cents a copy.

Book of Record in Time Capsule

On Friday, September 23, the ceremonies attending the sinking of the time capsule under the direction of the Westinghouse Electric and Manufacturing Company were held at the World's Fair Grounds to commemorate this epic event. The Book of Record of The Time Capsule of Cupaloy was entrusted for preparation to the hands of G. Leonard Gold and Rosaspina was chosen for the paper because it is manufactured by hand from 100 per cent rag stock and responds to all of the tests for longevity. The colophon of the de luxe edition reads as follows:—

"This Book and the Time Capsule which it describes have been prepared by the Westinghouse Electric and Manufacturing Company as a contribution to the people of a future age. This book has been produced by G. Leonard Gold of the Prestige Book Company; printed by Howard Coggeshall at his Press in Utica, New York, on types designed and arranged by Frederic W. Goudy at the Village Press in Marlborough, New York. The frontispiece was produced by Charles Furth at the Photogravure and Color Company and the binding was planned and produced by Randall W. Bergmann of the Russell-Rutter Company, New York, in September, 1938. The paper for this special edition, is Rosaspina, handmade, supplied by the Thomas N. Fairbanks Company, New York."

Ontario Paper Co. Project Nears Completion

Huge Industrial Plant and Modern Mill Town At Schreiber Nears Final Completion As Million Dollar Barking and Shipping Departments Will Be Ready Soon—Abitibi Reorganization Deferred — Other News.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., October 3, 1938—At Heron Bay some sixty-two miles east of Schreiber, Ont., an industry of great magnitude is nearing completion in the shape of the barking drum and shipping plant of the Ontario Paper Company Limited, Thorold, Ont. When completed the undertaking will cost a million dollars and will employ about two hundred men during the summer months. The work started in June last and will be fully finished by November with the exception of the machinery and equipment. In January the machinery will arrive and be installed during February. Operation of the plant and shipping of pulpwood is expected to take place on May 1st. The magnitude of the enterprise can be realized by the fact that when completed, the wood, after being barked at the barking plant, will travel a distance of three and a half miles through a flume to the loading dock on the shore of Lake Superior. To supply the electrical power for the whole outlay a modern power plant is being erected, with energy being obtained from the Black river, two miles from the town site. There is also being built a wharf which juts out three hundred feet into Lake Superior. At this wharf, the freighters owned by the Ontario Paper Company will tie up and load up with the barked wood.

A Modern Paper Mill Town

The buildings of the town are all of modern construction and design. They are of old English manor style of architecture and include a large, three story staff house, the manager's house, hospital, offices, machine shop and garages. As stated, the new Heron Bay plant is owned by the Ontario Paper Company, of which Col. Robert R. McCormick, of Chicago, is the president. He is also head of the Chicago Tribune which owns and controls the Ontario Paper Company. Last week Col. McCormick flew to Heron Bay in his private seaplane to look over the work already completed. A. A. Schmon, of Thorold, Ont., is president of the Heron Bay division of the Ontario Paper Company, E. B. McGraw of Montreal is woodlands manager and Roy W. Shaver, of Thorold, is in charge of all construction. James D. Davis is resident manager of the Heron Bay plant and A. W. Lash, of St. Catharines, is the designing and estimating engineer. B. A. Ferguson is office manager. The wood will be cut in camps situated in what is known as the General Timber Company's limits eight miles east of Heron Bay. The Ontario Paper Company has a lease on the limits of the General Timber Company. According to government contract, a minimum of 40,000 cords of pulpwood must be cut yearly but it is the intention to increase operations to 75,000 cords. At the wharf is situated a natural pulpwood storage pond which will have a capacity of 15,000 cords. This wood will be held in reserve to keep up loading operations. Lately the Ontario Paper Company celebrated its twenty-fifth anniversary. Since its inception all its plans have operated without a day's loss of time.

Abitibi Reorganization Plans Deferred

It is learned that no reorganization plan of the Abitibi Power and Paper Company Limited, Toronto, will be undertaken for some time as current earnings make the plan impractical just now. No official steps have been begun by any of the groups toward reorganization and it is understood that the appeal against the judgment of last June when the Ripley plan for reorganization lost out before the Ontario Court of Appeal will not be started. The bondholders protective committee, sponsors of the Ripley plan, have until October 12 to launch an appeal. It is felt, however, that the judgment of the two courts has fairly definitely shown that the Ripley plan could not be carried out under the amended Ontario Judicature Act.

Sawyer-Stoll Purchase Timber Tract

Sawyer-Stoll Timber Company, Escanaba, Mich., who some time ago secured a provincial charter in Ontario under the title of the Sawyer-Stoll Lumber Company of Canada, Limited, which is a subsidiary organization, recently bought fifty-six square miles of timber in Effingham township, Addington county, Ont., and plan to cut during the coming ten years 150,000,000 feet of wood. Operations will probably begin this winter after the completion of camps and a saw mill. C. J. Sawyer is president of the new subsidiary and C. W. Stoll secretary-treasurer. At least three hundred men will be employed in woods and mill operations and a large portion of the activities of the company will be pulpwood.

George C. Winlow Convalescing

George C. Winlow of Ottawa, who is sales manager of the pulp and paper department of J. R. Booth, Limited, Ottawa and resided for many years in Toronto, was some time ago the victim of a heart attack. Mr. Winslow is now in a rest home in Toronto and making favorable progress. He hopes to be able to return to Ottawa in the near future.

Golf and Horseshoe Pitching Tournaments

The annual fall golf tournament and horseshoe pitching contest of the Canadian Paper Box Manufacturers Association was held at the Cutten Golf Club in Guelph on September 19. There was a good turnout for the event, some ninety members taking part. The following were the prize winners:

Golf: Low Net, Roger Godden; Low Gross, Ray Neil; Second Low Net, F. C. Adams; Second Low Gross, Bob Gold and Bill Shutt; High Net, J. Trotter and A. C. Adam; High Gross, E. A. Radford; High Sealed Hole, Pat O'Reilly, George Clark, J. A. Northey, C. C. Jones; Low Sealed Hole, Roy Cameron.

Horseshoes: First, Oscar Boehmer and Fred Emerson. Second, C. L. Herron, J. McIntosh.

Paper Salesmen Build Up Active Association

Rittenhouse Association of Philadelphia Paper Salesmen Formed In 1936 Has A Membership of 128 — Varied Activities of the Organization — R. D. Perry Made Manager of Beck Company's Fine Paper Department

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., October 3, 1938.—During the winter seasons for several years the Philadelphia Paper Trade Association held a series of lectures designed to aid paper merchants' salesmen in the various phases of the paper business, all of which lectures were fully reported in these columns. Enrollments in this Salesmen's Study Course were oversubscribed and represented very high-type salesmen. Acquaintanceships among these salesmen students ripened into friendships and where heretofore more or less antipathy for each other was the order of the day, this was all supplanted by mutual understandings and social camaraderie, and the upshot was that one day after the close of the 1937-38 classes, seven salesmen from five houses assembled for luncheon at a little restaurant on Fifth street. Subsequently, eleven salesmen from nine paper houses met at the same little restaurant, and so on until an Association of Philadelphia Paper Salesmen was formed, and is now known as The Rittenhouse Association of Philadelphia Paper Salesmen, which today has a membership of 128.

Varied Activities of Association

Many and varied have been its activities since it came into being. The first annual outing was held during August at Hi-Top Country Club, where in addition to golf there was tennis, soft ball games and other sports, followed by dinner in the evening and a ten-act floor show. Beside the president's trophy there was also a silver cup, presented by W. C. Hamilton & Sons, the latter being an individual prize which, for permanent possession, must be won three times. George Phelps of the Charles Beck Division of the J. L. N. Smythe Company won the individual prize. Due to the late hour of starting, the awarding of the beautiful gold trophy for the quoit pitching tournament, presented by Munising Paper Company, was postponed until September 14th, when the Satterthwaite and Brosius team from Satterthwaite-Cobaugh Company were the lucky winners.

Officers of the Association

The officers are: Harold T. Robinson, Whiting-Patterson Company, president; William Wolohan, Molten Paper Company, vice-president; H. Monoghan, Wilcox, Walter-Furlong Company, secretary; M. C. Walker, A. Hartung & Company, treasurer. Those comprising the executive board are: L. Leatherman, Thos. W. Price Company; H. Monoghan, Wilcox, Walter-Furlong Company; Earl Miller, Paper House of Pennsylvania; S. T. Vance, Raymond and McNutt Company; M. C. Walker, A. Hartung & Company; William Wolohan, Molten Paper Company; H. T. Robinson, Whiting-Patterson Company; A. Snowden, D. L. Ward Company; George Phelps, Charles Beck Company; Edwin Mouten, Paper Merchants, Inc.; Terrance Horgan, J. R. Howarth Company; Merle Heberle, Garrett-Buchanan Company; Thomas McIntire, Schuylkill Paper Company; R. G. Underdown, Quaker City Paper Company; Preston Rhodes, Hooper Paper & Twine Company; Charles Robinson, Satterthwaite-Cobaugh Company; Joseph Howe, Whiting Paper Company; Charles Stokes, Sabin-Robbins Paper Company; Herman Schwartz, Schwartz Paper Company; M. Mellet, Phila. Card and Paper Company; Louis Brown, Penn Card and Paper Company; and R. Goldberg, Wilder Brothers. The committee chairmen are: Social—Alfred Snowden, D. L. Ward Company; Educational—Edwin Mouten, Paper Merchants; Membership—L. Leatherman, Thomas W. Price Company; Publicity—R. G. Underdown, Quaker City Paper Company; Finance—Earl Miller, Paper House of Pennsylvania.

Winners at Last Golf Tournament

The final golf tournament of the season for the Philadelphia Paper & Cordage Association was held at the Philadelphia Country Club's Spring Mill Course on Wednesday, September 28th. The weather was ideal. There were thirty-eight golfers competing for the prizes. H. Satterthwaite of Satterthwaite-Cobaugh Company, was winner of the low gross prize, with a score of 41-43-84. He was followed by R. L. Haney, who came in a very close second with an 85. The low net score was turned in by L. A. Dodd, who had a score card of 43-44, with a handicap of 18, which gave him a net score of 69.

The Putting contest was won by Bob Reed of Quaker City Paper Company, who turned in a 21. The Hole-In-One Contest was won by a guest, E. Line of the U. S. Chamber of Commerce, who dropped his ball just 34½ inches from the cup.

The formal awarding of the prizes and the drawings for Kickers Handicap prizes will take place at the next scheduled meeting of the Association, October 21st, at Adelphia Hotel. The winner of the Buffalo Envelope trophy will also be announced at that time.

Raymond-McNutt Make Improvements

Raymond & McNutt Company, has recently made extensive improvements in its finishing department. The department does finishing work on all kinds of stock and includes deckle-edging, hot press "blind" stamping, "spot ironing" of rough-finish papers, beveling, scoring, gilt edging, color bordering and paneling.

R. D. Perry Appointed Manager

Reginald D. Perry has been appointed manager of the Charles Beck Company, Division of the J. L. N. Smythe Company, the name of the fine paper division of the latter company since the recent consolidation. Mr. Perry had been with the Beck Company for some time. H. F. Kolb has been made office manager of the merged concerns and Charles Beck, who formerly headed the Beck Company, is now concentrating on the selling end of the fine paper department.

Bowater Expands Pulp and Paper Production

Bowater-Lloyd, Ltd., Which Acquired International Power & Paper Co.'s Cornerbrook Mill Reach Agreement With Government To Expand Pulp and Paper Output — Demand For Light Weight Paper — Other News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., October 3, 1938.—From St. John's, Newfoundland, comes the official announcement by the Commission of Government that an agreement has been reached between the Government and Bowater-Lloyd (Newfoundland) Limited, in respect to the timber and tariff concessions which the latter were seeking as a preliminary to extensive pulp and paper developments. The agreement has to be submitted to the Dominion Office in Great Britain for approval and meanwhile its terms are not disclosed.

It will be remembered that the British newsprint company recently acquired International Power and Paper Company's Cornerbrook plant. Since then it had been negotiating with the Government over construction of a $6,000,000 sulphite mill in a heavily-timbered section of Newfoundland. The company would build the mill in return for timber and tariff concessions.

Later the company made alternative proposals. The second proposal would have increased the capacity of the Cornerbrook mill by 226 tons daily. This was the capacity of the projected mill. Under this proposition an agreement would be entered into with Bowater-Lloyd (England) Limited to cut for export a minimum of 50,000 cords of pulpwood for a period of years. Establishment of facilities for increased pulp production would be in exchange for rights to cut wood for export.

In a statement last spring the company said it had made the alternative proposal in view of the "many difficulties" inseparable from schemes for establishment of a sulphite mill in the Gander Lake district.

Canadian Newsprint For France

The Vicomte de Brimont, representative of a large chain of French provincial newspapers, in an interview in Montreal, gave details of a plan whereby Canadian manufacturers of newsprint may in the future capture for their product a large section of the French market. This could be done by plans now under way whereby French "quality" manufactures would be exchanged for Canadian newsprint.

At the present time, he said, newsprint in France, obtained chiefly from the Soviet Union and Norway, was more expensive than anywhere else in Europe. Present conditions of limited supply had much to do with the small size of French newspapers; for this reason some publishers were unable to meet the demand for full news coverage on international affairs, he said.

The organizations in which the Viscount is interested are planning to open a bureau in Paris to supply information to French businessmen wishing to export to Canada, and, later, a corresponding office in Montreal. Efforts of the French exporters will be directed primarily to trade in luxury goods—wines, cosmetics and so forth—which do not compete with Canadian or British manufactures.

Before returning to France the Vicomte de Brimont will study newspaper production here and in the United States. He is planning to visit Canada again in January.

French Firm Plans Canadian Wood Plant

Another French business man interested in Canadian forestry products who has been visiting Montreal during the past week is the Marquis de Liniers, general manager of the firm Injection Rapide et Conservation des Bois, of Paris, holders of a new patent process for the creosoting of wood products. His company has plans for the erection, probably in the district of Montreal, of a branch plant for putting the newly-invented process into commercial operation.

The process, he said in an interview, is not only less expensive than the average but also gives better preservative qualities to the treated wood. Not only can the hardest lumber be treated "right to the heart" but less material is needed to give full sterilization to soft, absorbent timber. His company is able to manufacture railway ties good for at least 25 years, and has received contract of the French Department of Posts and Telegraphs, he said.

The French company operates four plants in France itself, one in Algeria, and is constructing a sixth in Senegal, where the damage caused by termites and other insects is particularly heavy. It is possible that a second Canadian plant will be built, in British Columbia.

The Marquis de Liniers, who is making his first trip to Canada, has just returned from a tour of inspection of the lumber mills of British Columbia.

New Demand for Lightweight Paper

Prospects for a new business in lightweight paper are opened up by the appeal received here from Imperial Airways of London for the co-operation of editors, who are asked to take every opportunity for fostering the use of lightweight paper for correspondence dispatched over Empire routes.

Banks and business houses it is stated, are already users of lightweight stationery; but the latest information shows that there is still scope for a further extensive use of such lightweight paper, not only by commercial firms but also in private correspondence. With the introduction of the "all-up" mail scheme Imperial Airways is now carrying in and out of Southampton approximately 1,500 tons of Empire mails a year; while there is, in addition, the volume of mail-matter air-borne between intermediate points. No other country in the world approaches anywhere near this total of external air-mail.

Both individuals and business houses can, it is added, make a further valuable contribution to the success of the 'all-up' service by acquiring the habit of using lightweight stationery for both letters and envelopes.

The result will not imply any varying in the number of letters carried, but an all-important lessening in the total weight and space they represent; and this will mean that each air-liner operating on Empire routes will have increased capacity for passengers and freight as well as mails.

Financial News of Pulp and Paper Industry

Plan Calling For Financial Reorganization Of Eastern Mfg. Is Filed By Common Stockholders—A. P. W. Paper Co. Shows Net Loss Of $252,579 — Outgamie To Pay Dividend — Consolidated Case Dismissed.

NEW YORK STOCK EXCHANGE

High, Low and Last for the Week Ending October 5, 1938

	High	Low	Last
A. P. W.	3⅛	3	3
Armstrong Cork Co.	48	41½	48
Celotex Corp.	28⅝	22¼	27⅞
Celotex Corp., pf.	70	68	70
Certain-Teed Products Corp.	12	9¼	12
Certain-Teed Products Corp., pf.	45	35½	44½
Champion Paper & Fibre Co.	25¼	22½	25¼
Champion Paper & Fibre Co., pf.	95	95	95
Congoleum-Nairn Co.	28¼	24¼	27¾
Container Corp. of America	16¼	13¼	15½
Continental-Diamond Fibre Co.	9¾	8¾	9¾
Crown-Zellerbach Co.	13⅝	11	13½
Crown-Zellerbach Co., pf.	83	79½	83
Flintkote Co.	28¾	22¼	28¾
Robert Gair	4½	3¾	4½
Robert Gair, pf.	14	14	14
International Paper & Power	10⅛	8½	10⅛
International Paper & Power, pf.	42⅞	35⅝	42⅝
Johns-Manville Corp.	106½	94½	105½
Johns-Manville Corp., pf.	128½	127⅞	128½
Kimberly-Clark Corp.	26½	25	26½
MacAndrews & Forbes	29	28	29
Masonite Corp.	60	50¾	60
Mead Corp.	14⅞	11½	14⅞
Mead Corp., pf.	65	65	65
Paraffine Companies, Inc.	50	47½	50
Paraffine Companies, Inc., pf.	100½	99½	100½
Ruberoid Co.	30½	29½	30½
Scott Paper Co.	50½	47⅜	50½
Sutherland Paper Co.	30¼	27¾	30¼
Union Bag & Paper Corp.	13¾	11	13⅜
United Paperboard Co.	7	6½	7
U. S. Gypsum Co.	109	97½	109
U. S. Gypsum Co., pf.	166	166	166

NEW YORK CURB EXCHANGE

High, Low and Last for the Week Ending October 5, 1938

	High	Low	Last
American Box Board Co.	10½	9½	10½
Brown Co., pf.	27	21	27
Great Northern Paper	31	31	31
St. Regis Paper Co.	3⅛	2¾	3⅛
Taggart Corp.	5⅜	4½	5½

To Reorganize Eastern Mfg. Co.

A plan calling for a financial reorganization of the Eastern Manufacturing Company of South Brewer was filed last week in the northern division of the U. S. district court in Bangor, Maine, by a committee of common stockholders.

Robert L. Moore of Concord, Mass., president of the General Investment Company of Boston, owners of 13,400 shares of the Eastern's common stock, was named chairman of the common stockholders' committee. Other members of the committee were Edward L. Bullock and Ernest M. Reid, both of Syracuse, N. Y., Gorham H. Wood of Bangor, and Robinson Verrill, Portland lawyer, secretary of the committee.

Since December, 1937, the Eastern Manufacturing Company has been operating under provisions of the national bankruptcy act.

Hearing on the proposed reorganization plan will be in Bangor on a date set by U. S. Judge John A. Peters.

The plan proposes a new company with a new board of seven directors. A phrase in the "plan," however, said "it is expected that the present management will be retained."

New capital would be injected in the company by an offer, included in the plan, whereby the General Investment Company would purchase all new, common stock not subscribed by present stockholders.

Under the proposed reorganization all first mortgage 7 per cent bondholders would receive new first mortgage bonds paying five per cent, maturing in 15 years. For interest arrears these bondholders would have option of accepting one new share of common stock for each $5 in interest arrears or of accepting half of the interest arrears in cash.

Bonds of the Orono Pulp and Paper Company, owned by the Eastern Manufacturing Company, would be given the same treatment under the proposed reorganization.

Bank loans outstanding would be replaced with secured notes to the amount of $1,152,000, bearing four per cent interest, maturing in 5 years. A special sinking fund, created out of gross earnings, would amortize these obligations.

Preferred stockholders would be given four shares of the new common stock for each share of preferred stock held and accumulated dividends.

Common stockholders would be assigned one share of the new common stock for each share of old common, plus the right to buy, within 35 days after and if the proposed plan is accepted by the court, one share of the new common stock for each two shares of old common stock held, at $3 per share.

Outagamie Bondholders Notified

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 3, 1938—Holders of bonds of the former Outagamie Paper Company, Kaukauna, Wis., have been notified to present them to the clerk of the circuit court of Outagamie county. Each holder is to be paid a liquidating dividend resulting from a court sale of the property several months ago. The mill was owned by Patten Paper Company, Ltd., Appleton, Wis., at the time of its sale.

Case Against Consolidated Dismissed

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 3, 1938—A case brought by J. W. Dunegan of Stevens Point, Wis. against the Consolidated Water Power and Paper Company was settled last week and dismissed by Judge Byron B. Park. The suit was to determine the value of land taken by backwater from the Consolidated's Stevens Point dam.

APW Shows Loss

A net loss of $252,579 in the fiscal year ended on June 30, in contrast to a net profit of $53,589 in the preceding year, was reported last week to stockholders of the APW Paper Company by Dwight G. W. Hollister, president. Mr. Hollister attributed the loss to a severe decline in general business activity, coupled with increased costs of raw material and labor. Gross sales for the year were given as $3,019,464.

A voluntary readjustment of the company's funded debt is being considered to finance "necessary modernization of our manufacturing equipment."

Paper and Pulp Safety Program

An exceptionally fine program has been prepared for the annual meeting of the Paper and Pulp Section of the National Safety Council at the Stevens Hotel, Chicago, October 10-14. The following papers and discussions will be presented at the various meetings:—

Past Year's Activities and Progress of the Section, General Chairman George J. Adams.

Safety—An Operating Problem. A. B. Hansen, Executive Vice-Pres. and General Manager, Northern Paper Mills, Green Bay, Wis.

Psychology of Dealing With Employees. Dr. H. S. Hulbert, Consulting Psychiatrist, Chicago.

Safe Practices in Handling Pulpwood—Mill Yards, Boats and Railway Cars. Leon Shaffrey, Yard Supt., Bowater's Newfoundland Pulp and Paper Mills Company, Ltd., Corner Brook, Newfoundland.

Designing Paper Mill Machinery for Production and Safety. M. W. Dundore, Production Manager, Beloit Iron Works, Beloit, Wis.

Eliminating Hazards in Box Board Conversion. G. J. Bienvenu, Superintendent, Gaylord Container Corporation, Container Division, Bogalusa, La.

Control of Plant Conditions Bearing on the Health of Paper Mill Employees. Col. Thomas Dobbins, Medical and Safety Director, Servel, Inc., Evansville, Ind.

The Value of Accident Statistics, Including a Review of 1937-38 Experience. F. W. Braun, Vice-Pres. and Chief Eng., Employers Mutuals, Wausau, Wis., and Chairman, Statistics Committee, Paper and Pulp Section, N. S. C.

Advantages of Physical Examinations from the Viewpoint of the Personnel Director. Dr. Louis H. Frechtling, Director, Department Industrial Relations, Champion Paper and Fibre Company, Hamilton, Ohio.

Round Table Discussion of Paper Mill Problems. (Ten minute talks—ten minute discussions.)

(a) Safety Kinks. D. B. Chant, Secretary-Eng., Ontario Pulp and Paper Makers' Safety Assn., Toronto, Ont., Canada.

(b) Electrical Hazards. R. G. McGivney, Chief Electrician, Oswego Falls Corp., Fulton, N. Y.

(c) Safety When the Mill is Down. J. A. Lampert, Supt., Kimberley-Clark Corp., Kimberly, Wis.

The First Aid Instruction to Workers. R. W. Croucher, Personnel Director, Minnesota and Ontario Paper Company, International Falls, Minn.

The officers of the Paper and Pulp Sections are as follows: General Chairman, George J. Adams, International Paper Company, Glens Falls, N. Y.; Vice-Chairman in Charge of Membership, Arthur E. Winslow, Hollingsworth & Whitney Company, Waterville, Maine; Secretary and Program Chairman, F. A. Robinson, Kimberly-Clark Corporation, Neenah, Wis.

Indianapolis Demand Unsteady

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., October 3, 1938—Paper demand, particularly in the fine paper field has had its ups and downs during the last week or so, according to local jobbers. Right at a time when it seemed there was a definite trend toward larger volume, there would come a slump, which, however, seemed of short duration. It is pretty well determined that volume during the last quarter of this year will be better than that of a year ago, for a slump hit the trade last year that never was improved until the late spring and early summer this year. It is doubtful, however, if demand will be much more for the entire year than it was in 1937. The jobbers are hopeful, however, and much depends on the amount of direct mail advertising that is sent out for the fall and winter season. Fine paper jobbers report that there is considerable of this work being figured on and they are hopeful that most of it will be closed.

The container demand remains virtually unchanged. With cooler weather, demand for containers for the ice cream trade has dropped, as was expected, but on the other hand demand from other branches of the confectionery trade is increasing. There has been a good box demand for both hardware and textiles and this should continue until the first of the year. Warehouse stocks with the manufacturers are fairly low at present and any demand will react immediately on production.

Tissues continue in good demand, but all summer specialties have declined. Stocks that will have to be held over, however, are light and will be reduced almost to the vanishing point before the annual inventory period.

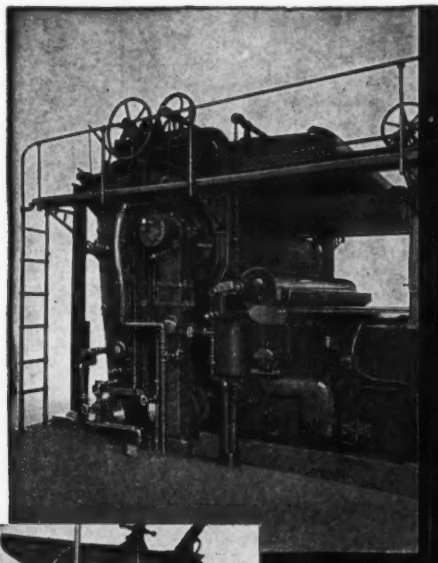
Demand for newsprint continues good. The steadiness of this demand is encouraging to the trade and would seem to presage a confidence of business for the future.

Paper stock is in poor demand with large local supplies. There appears to be some demand for fine grade rags and paper.

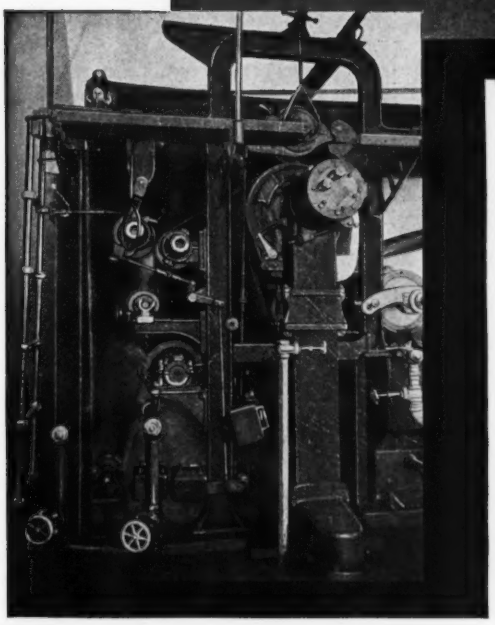
Albany Puts Embargo on Wood Pulp

[FROM OUR REGULAR CORRESPONDENT]

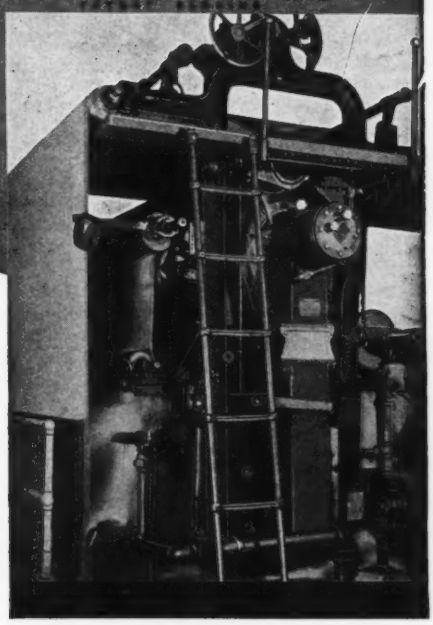
ALBANY, N. Y., September 26, 1938—The Port District Commission here has declared an embargo on wood pulp arriving at this port, effective October 1, following announcement that all warehouse buildings are congested and overflowing. More than 75 importers and shippers were notified of the action and the only exception from the ruling is on pulp which moves directly from ships to freight cars. A census taken by port officials this week revealed that crowded into the warehouses are 155,000 bales of wood pulp with a value of nearly $1,500,000. The bales weigh about 31,000 tons and there is no more space. An official of the port declared that it has been a difficult situation since spring to handle shipments of the product coming to this city and all dockfront warehouses are now filled, leaving only a small space for general cargo. The embargo falls at a time when the shipment of wood pulp from Scandinavian countries enters its big season. During the last three months of the year between 30,000 and 40,000 tons of wood pulp usually arrive at the port and the Port Commission will probably lose a revenue of about $26,000. In its notification to shippers the officials brought out that there has been a comparatively small outgo of the product to the mills since July and a large intake. Two more vessels are scheduled to arrive here this month but their cargoes will be diverted to New York, Boston or other ports unless shipped direct to freight cars. It was stated that lifting of the embargo would depend upon the speed with which the product is withdrawn from storage.



BELOIT SUCTION *Drum Press*



Results: Equivalent to suction drum and suction primary press combined



An absolute necessity on every board machine

Superior to all other methods of water removal on wet felts. • There must be a reason for over thirty of these rolls.

Ask the mills who installed them.

THE BELOIT WAY BELOIT IRON WORKS PAPER MACHY BELOIT WIS **IS THE MODERN WAY**

BELOIT IRON WORKS, Beloit, Wisconsin, U. S. A.

W. H. Kenety Made Manager

At the meeting of the Book Paper Manufacturers Association held in Chicago September 27, the announcement was made of the appointment of William H. Kenety, vice-president of the Northwest Paper Company, as managing director of the association. C. Leslie Barnum, assistant to the former managing director who has been acting managing director since the resignation of Mr. Parker last fall, has been elected secretary-assistant treasurer, succeeding R. S. Berry. Mr. Kenety has been identified with the paper industry for over 20 years in all phases of the production and merchandising of book paper and the financial and policy problems of paper mill operations. He has been a member of the executive committee of the Book Paper Manufacturers Association for the last three years. At the University of Minnesota from which he received the degree of Bachelor of Science in 1912 he specialized in the study of wood and wood fibers and shortly after graduating was made an assistant professor at the University. Later he was made superintendent of government research work in the Lake States and represented this region on the National Research Council. In 1920 he was engaged by the Weyerhaeuser Lumber Companies to supervise their forest operations in Minnesota and later was made vice-president of the Northwest Paper Company in charge of production. In 1930 he was made general manager of the company. Since Mr. Kenety has been with the Northwest Paper Company he has helped build it from a small two machine newsprint mill to its present production of 200 tons per day, developing new pulp processes and the new products for which it is known today.

Mr. Kenety was born in Fulda, Minn., the grandson of early settlers in this region. He is a member of the Kitchi Gammi Club, the St. Paul Athletic Club, a senior member of the Society of American Foresters and the Honorary Scientific Society of Sigma XI.

He has written for several publications on subjects in connection with the problems of the paper and pulp industry. Mr. Kenety assumed his new position October 1 and will reside in New York.

Merchants Paper Co. Starts

The Merchants Paper Company has started a wholesale paper business in Abilene, Tex. T. N. Carswell is president and general manager and P. H. Daffenbaugh is sales manager. The new concern will carry paper, paper products and twine for every type of business. One of the heaviest lines will be wrapping paper and paper bags. A printing plant will be installed for the printing of firm names and insignia on wrapping paper, bags and boxes. The firm will do business only on a wholesale basis.

Fine Paper Houses Meet in Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., October 3, 1938.—A dinner meeting of all fine paper houses in and around Boston who subscribe to the credit clearance paper was held at the Boston Chamber of Commerce Thursday evening, with John H. Brewer vice-president of the Fine Paper Division, presiding. Members discussed operation of the plan for interchanging credit information which has worked very successfully since 1934. There was a very good attendance, with nearly every member house present.

New England TAPPI in Berkshires

The opening meeting of the Technical Association of the Pulp and Paper Industry was held at the Berkshires Hunt and Country Club, Lenox, Mass., Saturday, October 1, 1938.

A golf tournament was held in the afternoon with the following results: Low net won by Kurt Wandel, New York, N. Y.; low gross—Fred H. Schneider, Springfield, Mass.; second low net—W. G. Russell, Holyoke, Mass.; high score—L. B. Tucker, Dalton, Mass.; kickers for TAPPI trophy—H. S. Leonard, Boston, Mass., and kickers for superintendents cup—Thomas E. Boyne, Lee, Mass.

Following the dinner, John Calkin, chairman, presided at the meeting, during which was shown the Weyerhaeuser Timber Company film "Trees and Men" depicting the woods operations in the Pacific Northwest.

Those present included: Herbert Hobday, Wm. H. Hawver, Jr., George Bower, Jr., R. E. Kilty, William F. Talbot, Robert Mannheim, Engel Krichels, R. H. Dempsey, Helen U. Kiely, Herbert S. Leonard, Fred H. Schneider, Kurt Wandel, P. W. Ayers, A. F. Cosby, W. G. Russell, Richard Driscoll, E. A. Richardson, W. F. Powers, Thomas E. Boyne, A. L. Perry, L. A. O'Rourke, William Glendon, R. D. McCarron, C. L. Reece, Charles F. Moreau, Murray M. Rubin, Arthur Hobday, Howard A. Sikes, F. H. Williams, John B. Calkin, Robert B. Anderson, Frederick Young, Archibald Sharkey, Frank R. Swayne, Vincent Richard, L. B. Tucker, William Hassett, E. O. Reed, Fred Randall, Frank Knowlton, Ralph Carter, Harold S. Steward, John M. McGarry, R. J. Hemphill, B. W. Dean.

Providence Paper Co. Not Wiped Out

The Providence Paper Company writes as follows: "We wish to correct the report of last week that we were entirely wiped out by flood. Our basement, retail store, offices and part of our auxiliary warehouse in another section of the city were inundated. A large percentage of the stock ruined has already been replaced and the balance will arrive within a short time. Our entire organization is intact. Everyone has expressed and shown a fine spirit of loyalty. Our mill connections immediately rushed to our assistance which enabled us to make shipments as usual in spite of the tremendous job of rehabilitation. The resiliency of spirit, the level headed, indomitable courage, the fundamental capacity for hard work so characteristic of our organization will permit us to rebuild on a firmer and more solid foundation. Through your Journal we would like to express our thanks to the manufacturers and merchants who so readily and willingly came to our assistance."

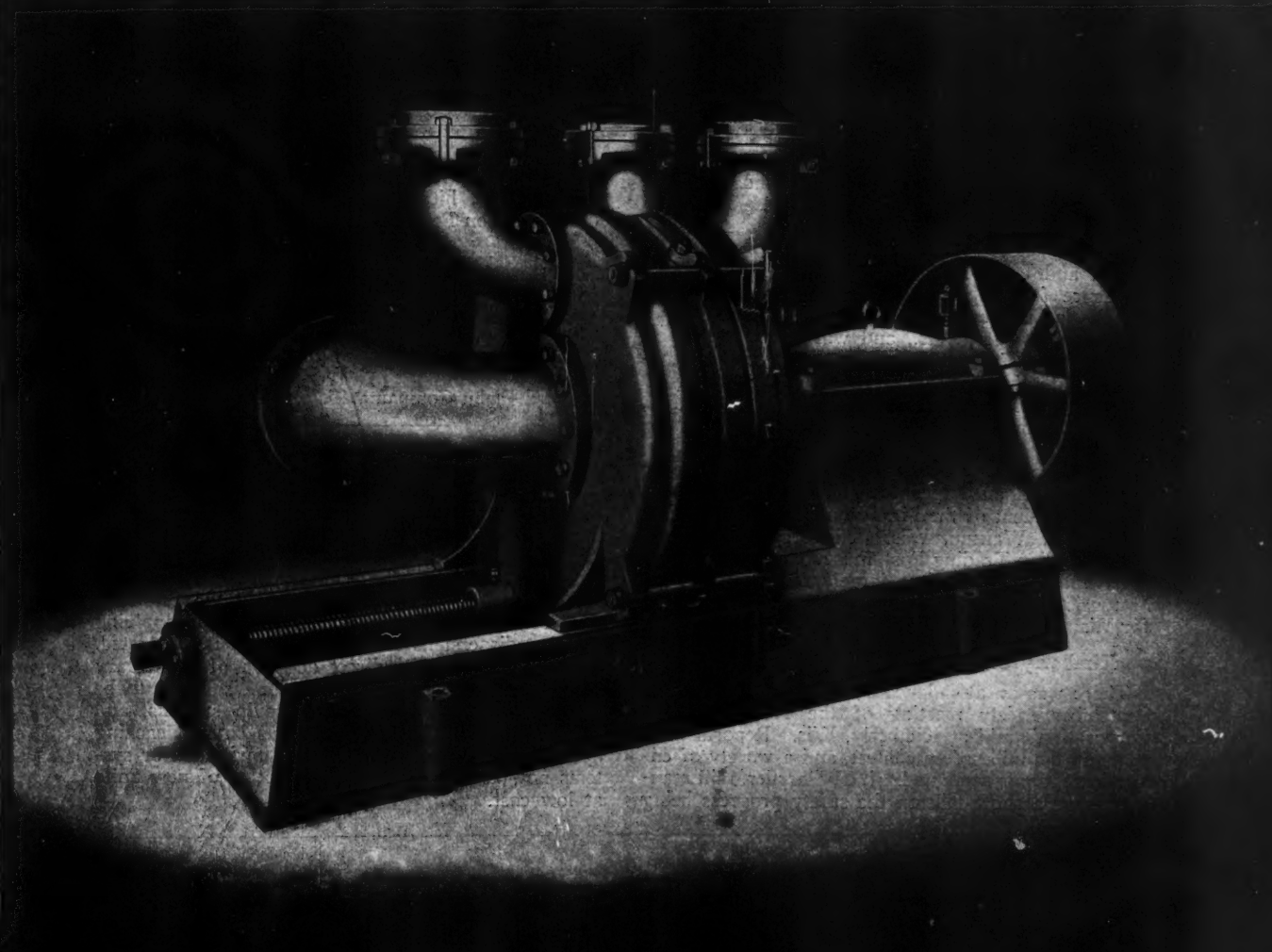
TAPPI Delaware Valley Section to Meet

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry will hold the first meeting of the session at the Engineers Club, October 14, 1938. The principal speaker will be Mr. Christian Siebert, Engineer on the Sanitary Water Board of the State of Pennsylvania and his subject will be "Some Aspects of Waste Treatment."

Dilts

- **COWLES CLASSIFINER:** Dilts built to defiber and clarify waste paper stock efficiently at a high rate of production.
- **EFFICIENCY:** A greater capacity than is usually required means no overloading—lower operating expense while producing a refined stock of better quality.
- **QUALITY:** Uniformly high quality stock eliminating foreign material—giving a stock with stronger and longer fibres.
- **ABLE ENGINEERING:** Consultations on your individual requirements without obligation. Write for details.

DILTS MACHINE WORKS, Inc. FULTON, N. Y.



WISCONSIN MAY HAVE PRIVATE POWER PROJECT

(Continued from page 11)

ately otherwise because of uncertain European conditions.

Consolidated Patented Process in Europe

This makes the sixth paper manufacturing company in Europe to which Consolidated has sold its patented coating process. The first was made to Lloyd Bowater and Company and the Star Paper Company of England. Their machines were built by the Beloit Iron Works, Beloit, Wis., and in a year and a half of operations they have more than fifty leading English magazines using the new coated product.

Rights were next sold for Norway, Sweden, Denmark and Finland to the Kymmene Company, and in France and Switzerland to Robert Naville. Voith Paper Machinery Company of Germany, holders of rights for European mills, made the machines for Naville. One of his mills at Rouen, France, started the coating process in September, with the assistance of B. F. Raprager of the Consolidated company. He is also assisting in the Switzerland mill, where the coating machinery is being installed and operations will be started this month.

Consolidated officials are now in conference with paper manufacturers in Belgium and Italy to take over the rights in these countries, and companies in South America, Australia and India are also negotiating.

Use of the coating invention was started two years ago when the Consolidated installed it on its largest Fourdrinier at the Wisconsin Rapids mill, producing 700 feet per minute. The success with which the new product met led to installations on five other Consolidated machines. The last one is an entirely new machine made by Rice, Barton & Fales. It was started last February, and runs continuously producing 85 tons a day for Life Magazine, whose contract was the largest ever made in the world.

Clayton Ewing Moves To Green Bay

Mr. and Mrs. Clayton Ewing have moved their residence from Neenah, Wis. to Green Bay, Wis. Mr. Ewing is president of the Falls Pulp and Paper Company, Oconto, Wis., and will direct mill operations from Green Bay. He was formerly connected with the Marathon Paper Mills Company at Menasha, Wis. Attorney E. W. Forkin of Menasha, is secretary-treasurer of the company.

D. C. Everest, vice-president and general manager of the Marathon Paper Mills Company, has been named president of the Marathon County Civic Corporation of Wausau, Wis. The corporation operates an Indian Trading Post, museum and Rib Mountain winter sports project, largely for the attraction of tourists. It will feature a centennial celebration for Wausau in 1939.

Kimberly-Clark Holds Safety Conference

There was an attendance of 285 employees at the September safety meeting of the Kimberly-Clark Corporation's mill at Kimberly, Wis. Reports were made on the mill safety contest, and a variety of entertainment was presented. J. T. Doerfler, mill manager, gave a short talk on the safety progress being made in the mill. Questionnaires containing forty questions on safety have been given out, to be marked "true" or "false." The best answered paper will give the owner a prize of five dollars.

President Sensenbrenner Relected

F. E. Sensenbrenner, assistant secretary of the Kimberly-Clark Corporation, has been reelected president of the Menasha Club, Menasha, Wis. It is a social organization made up of business and professional persons.

Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 5, 1938 — The Government Printing Office has received the following bids for 153,656 pounds (343,750 sheets) of 32½ x 48½ white sulphite index paper; Virginia Paper Company, 5.54 cents; Whitaker Paper Company, 5.65 cents; Old Dominion Paper Company, 5.6939 and 5.5944 cents; Stanford Paper Company, 5.59 cents; Barton, Duer & Koch Paper Company, 5.279 cents; Marquette Paper Company, 5.4 cents; R. P. Andrews Paper Company, 5.65 cents; Cauthorne Paper Company, 5.298 cents; Aetna Paper Company, 5.63 cents; Mudge Paper Company, 5.31 cents; Mathers-Lamm Paper Company, 5.286 cents; Walker, Goulard Plehn Company, Inc., 5.65 cents less 1%; and Bradner Smith & Company, 5.65 cents.

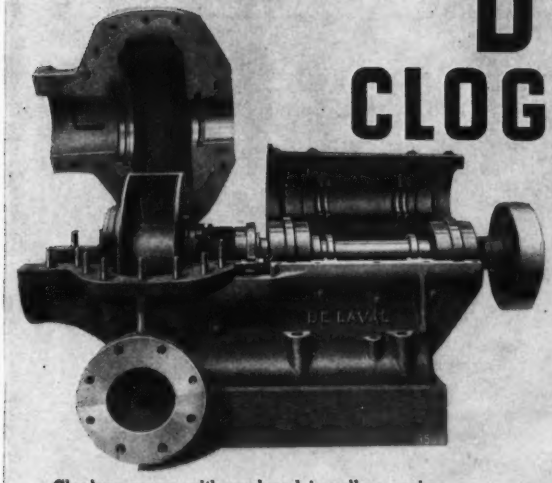
For 16,800 pounds (200,000 sheets) of 24½ x 32 green mimeograph paper; Aetna Paper Company, 6.14 cents; Graham Paper Company, 6.45 cents; Stanford Paper Company, 5.89 cents; Barton, Duer & Koch Paper Company, 6.14 cents; R. P. Andrews Paper Company, 6.54 cents; Mathers-Lamm Paper Company, 5.99 and 5.91 cents; Paper Corp. of U. S., 5.985 cents; Mudge Paper Company, 6.74 cents and 5.99 cents; Whitaker Paper Company, 6.06 cents; Old Dominion Paper Company, 5.87 cents.

For 5,000 pounds (200,000 sheets) of 50 per cent rag, 21 x 32 blue manifold paper: Barton, Duer & Koch Paper Company, 19.48 cents; Marquette Paper Company, 18 cents; R. P. Andrews Paper Company, 16.62 cents; Stanford Paper Company, 19.7 cents; Whitaker Paper Company, 19.445 cents; Mudge Paper Company, 19.54 cents; and Walker, Goulard Plehn Company, 19.7 cents.

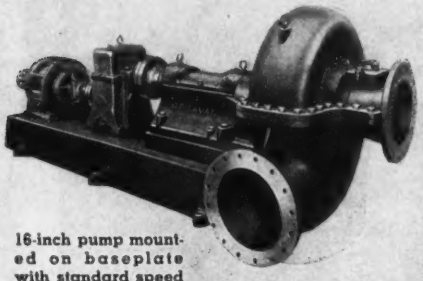
Liquid Chlorine Utilization

A new booklet just issued by the Pennsylvania Salt Manufacturing Company, 1000 Widener Building, Philadelphia, Pa., contains much practical information of the properties and safe utilization of chlorine and its compounds. In a section of the bulletin devoted to paper pulp chlorination, the Pennsylvania Salt Manufacturing Company's patent of applying chlorine dispersions in pulp bleaching is illustrated. This method for the direct addition of elementary chlorine to materials in suspension, is stated to be particularly applicable to wood pulp systems, and adaptable to continuous as well as batch bleaching operations. It may be applied to equipment or systems now in use, or to the installation of new units at low cost.

Superior Features of DE LAVAL CLOGLESS PUMPS



Clogless pump with enclosed impeller; casing cover and bearing cover lifted to show accessibility of impeller and wearing rings, also large size ball bearings, spaced well apart to prevent vibration.



16-inch pump mounted on baseplate with standard speed motor and helical speed reducing gear. The outer coupling on the motor shaft is for attachment to a standby gasoline engine.

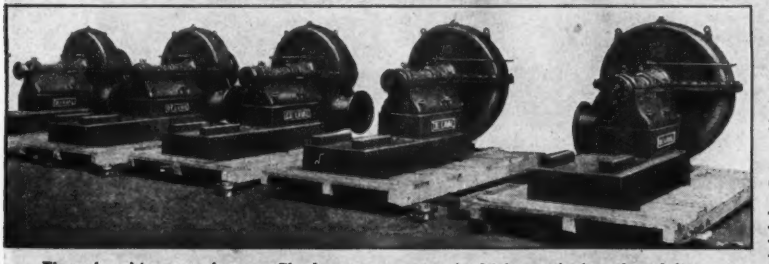
1 The casing is split in the plane of the shaft so that the pump can be disassembled without disturbing piping. The inlet is also accessible through a large handhole.

2 The single-inlet, overhung impeller has wide passages without sharp corners where fibrous materials could accumulate, but, at the same time, provides guidance for the water to obtain high efficiency and to avoid cavitation.

3 Wearing rings protect both impeller and casing at the joint separating the suction from the discharge space, to reduce leakage and to make it possible to restore the original efficiency at little cost. The rings can be sealed with clear water to keep out grit.

4 To reduce overhang, the stuffing box is located over the hub of the impeller, which is protected by a renewable sleeve. A clear water seal can be used to protect the packing.

5 The heavy shaft is carried in ball bearings spaced well apart and supported by a bearing pedestal cast integrally with the pump casing.



Five of a shipment of seven Clogless pumps, six of which are designed to deliver 10,400 g.p.m. each against 15 ft. at 294 r.p.m., and one to deliver 7000 g.p.m. against 27 ft. at 547 r.p.m.

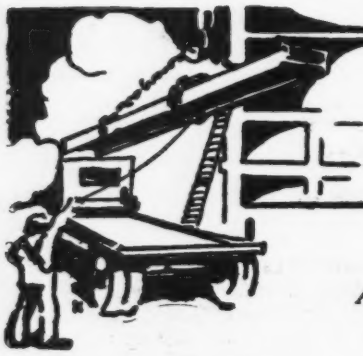
Upon receipt of data concerning the character of the liquid to be pumped and the head and capacity requirements, our Engineering Department will submit recommendations and estimates.

Ask for a copy of the paper on *SEWAGE PUMPS* read before the American Society of Mechanical Engineers by A. Peterson, Chief Engineer of the De Laval Pump Department.

3302

DE LAVAL Steam Turbine Co.
TRENTON, N. J.

MANUFACTURERS OF STEAM TURBINES, PUMPS—CENTRIFUGAL, PROPELLER, ROTARY DISPLACEMENT; CENTRIFUGAL BLOWERS AND COMPRESSORS, WORM GEARS, HELICAL GEARS, HYDRAULIC TURBINES AND FLEXIBLE COUPLINGS • • • SOLE LICENSEE OF THE BAUER-WACH EXHAUST TURBINE SYSTEM



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Financing and Operation of Pulp and Paper Mills

General Construction Notes

Canajoharie, N. Y.—Arkell & Smiths, manufacturer of paper sacks and kindred containers, have approved plans for new addition to plant, to be one-story, 100 x 180 feet, estimated to cost over $80,000, with equipment. General contract for erection has been awarded to G. W. Randall, 18 South Market street, Johnstown, N. Y., and work is scheduled to begin at once. Magill Smith, 232 Madison avenue, New York, N. Y., is architect.

Long Island City, New York—The Williams Container Corporation, manufacturer of special process paper containers for industrial liquids, etc., has leased a new one-story building on 31st place, near 48th avenue, recently completed, totaling about 8000 square feet of floor space, and will equip for new plant. It is expected to have the unit ready for production at early date.

Baltimore, Md.—The Raleigh Envelope Company, 801 North Calvert street, recently organized by W. Allen Raleigh, Jr., and associates, plans operation of local plant for the manufacture of commercial envelopes and other kindred paper products.

Neenah, Wis.—The Kimberly-Clark Corporation, has begun construction of new addition to mill, recently referred to in these columns, and will push work to early completion. Structure will be one-story, 70 x 160 feet, and will be used for storage and distributing service. It is estimated to cost close to $35,000, with equipment. C. R. Meyers & Sons Company, 50 State street, Oshkosh, Wis., is general contractor.

Carthage, N. Y.—The Carthage Paper Makers, Inc., manufacturer of manila paper stocks, board liners, etc., has completed plans for a new power house at mill, on which work will be placed under way at early date. A number of separate contracts are being awarded for erection, and orders will be placed for equipment at once. New station is reported to cost about $85,000, with boiler units and accessories, pumping machinery and auxiliary power equipment. Gannett, Eastman & Fleming, 600 North Second street, Harrisburg, Pa., are consulting engineers.

East Rochester, N. Y.—The Lawless Brothers Paper Mills, Inc., manufacturer of container board, fiber board and kindred products, has approved plans for new addition to mill, to be one-story, 55 x 240 feet, designed for storage and distributing service. It is estimated to cost close to $60,000, with equipment. General contract for structural steel framing has been awarded to the Pittsburgh-Des Moines Steel Company, Neville Island, Pittsburgh, Pa., and work on superstructure will be placed under way soon.

Kalamazoo, Mich.—The Kalamazoo Paper Company, manufacturer of book and writing paper stocks, has plans maturing for expansion and improvements in mill, primarily for expansion in paper-making division, as previously noted in these columns. A new paper-making machine is scheduled for installation, to provide for considerable increase in present output, with auxiliary equipment for corresponding advance in other production divisions. Entire project is reported to cost close to $400,000. Work will be placed under way at early date.

Enka, N. C.—The American Enka Corporation, manufacturer of cellulose rayon products, has awarded contract to Potter & Shackelford, Inc., Allen Building, Greenville, S. C., for new addition to mill, to be used for expansion in chemical division. It will be one-story, estimated to cost close to $50,000, with equipment. Executive offices of company are at 271 Church street, New York, N. Y.

Philadelphia, Pa.—Fire recently damaged a portion of the three-story building of the Economy Wall Paper Company, 610 Snyder street. An official estimate of loss has not been announced. It is proposed to rebuild at early date.

Charlotte, N. C.—The Carolina Paper Board Company, Charlotte, has work nearing completion on new one-story mill at the rear of 528 Turner avenue, to be equipped for the production of paper board and allied paper products. New unit will be 80 x 220 feet, estimated to cost in excess of $60,000, with equipment. It is proposed to have the plant equipped and ready for service at early date.

Jacksonville, Fla.—The United States Gypsum Company, 300 West Adams street, Chicago, Ill., manufacturer of wall board, plaster board and kindred products, has awarded general contract to the George A. Fuller Company, 597 Madison avenue, New York, N. Y., for proposed new mill on tract of land recently acquired on the Trout River, Jacksonville, lately noted in these columns, and work on project is scheduled to begin at early date. Another award for structural steel framing for buildings has been placed with the Virginia Bridge Company, Roanoke, Va., totaling about 585 tons of fabricated material. The site purchased by the company is located in the Panama Park district of city and formerly was held by the Cummer Lumber Company. Appli-

Perkins Quality Rolls

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Perkins roll shop is the largest in the world.

Perkins organization is always prepared to build your rolls to meet exactly your production requirements.

Perkins refills and remakes include the rolls of any manufacture, domestic or foreign, for any application in the paper industry.

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Web Supercalenders

Friction Calenders
Embossing Calenders
Mullen Paper Testers
Tensile Testers

Rag Cutters
Stock Cutters
Paper Dampeners

cation has been made to the War Department, Washington, D. C., for permission to construct docks and wharves on the river front, to provide facilities for unloading and distribution of raw material from company deposits in Nova Scotia, to be shipped to the new plant by water route. Considerable dredging of river in vicinity of mill site will be carried out in connection with this harbor development. New plant will comprise several large one- and multi-story units for different production divisions, a considerable portion of the mill to be given over to wall board manufacture. In addition, a power house, machine shop and other mechanical buildings will be erected, as well as storage and distributing buildings. Entire project is estimated to cost approximately $1,000,000, including equipment.

Chicago, Ill.—The National Paper Company, Hubbard avenue and Green street, manufacturers of paper products, has closed bids on general erection contract and will soon make award for proposed new addition to plant, to be three-story and basement, 40 x 100 ft., designed primarily for storage and distributing department. It is said that superstructure will be placed under way in October. Cost estimated about $40,000, including equipment. W. T. Braun, 228 North LaSalle street, Chicago, is architect.

Mobile, Ala.—The American Cyanamid and Chemical Corporation, 30 Rockefeller plaza, New York, N. Y., has plans maturing for new plant at Mobile, for the production of sulphate of alumina, used in paper manufacture and allied industries. Company secured a large tract of land for plant site a number of months ago and recently has concluded arrangements with the Alabama State Docks Commission for lease of right-of-way property of the state-owned terminal railway in vicinity of site, to be used in conjunction with the new plant. Several large units will be erected, reported to cost in excess of $500,000, including equipment. It is proposed to serve a number of Southern paper mills with sulphate of alumina from new plant, as well as mills in other parts of the country.

Prince Rupert, B. C.—The Prince Rupert Lumber, Pulp and Paper Mills, Ltd., Prince Rupert, has plans nearing completion for proposed new sulphate pulp mill on site in vicinity of city, recently selected, and it is proposed to begin erection of initial units at early date. New plant will be of large proportions, consisting of several one- and multi-story buildings, with power house, pumping station and miscellaneous mechanical divisions. Extensive pulp wood storage and handling facilities will be provided. Cost is estimated at close to $1,000,000, with machinery.

New Companies, Etc.

New York, N. Y.—The Pax Writing Paper Company, Inc., has been incorporated with capital of 100 shares of stock, no par value, to deal in writing and kindred paper stocks. New company is represented by the Albany Service Company, 315 Broadway, New York.

Hamilton, Ohio—The Champion Paper and Fibre Company has filed notice of increase in authorized common stock from 551,000 to 556,000 shares.

Fresno, Calif.—The Growdon Brothers Paper Company, 710 Broadway, Fresno, commercial and other paper stocks, has filed notice of organization to operate at Los Angeles, Cal. John B. and F. Neil Growden are heads.

Chicago, Ill.—It was stated in the issue of the PAPER TRADE JOURNAL of September 1, 1938, that Irving L. Odman Company, Inc., 61 West Hubbard street, had been incorporated with a capital of $10,000 to deal in paper products of various kinds, and would take over and succeed to the Odman Corporation, 350 West Erie street. This statement is incorrect, as the Odman Corporation is still continuing its business at 350-354 West Erie street, Chicago, under the same management. The Irving L. Odman Company, Inc., is an entirely different company and conducts its business at a different location and is in no way connected with the Odman Corporation.

Los Angeles, Cal.—The Cellulose Products Company, 6504 South Central avenue, Los Angeles, has filed notice of organization to deal in cellulose products. Company is headed by J. J. Clary Hogan, 421 East 18th Street, Los Angeles.

New York, N. Y.—The Greenfield Paper Corporation has been chartered with capital of 100 shares of stock, no par value, to deal in paper products of various kinds. New company is represented by the Excelsior Stationery Company, 116 Nassau street, New York.

Boston, Mass.—The United States Paper Sales Company, 39 Damrell street, South Boston, has filed notice of company organization to deal in paper goods of various kinds. James D. Coules, 1124 Commonwealth avenue, Boston, heads the company.

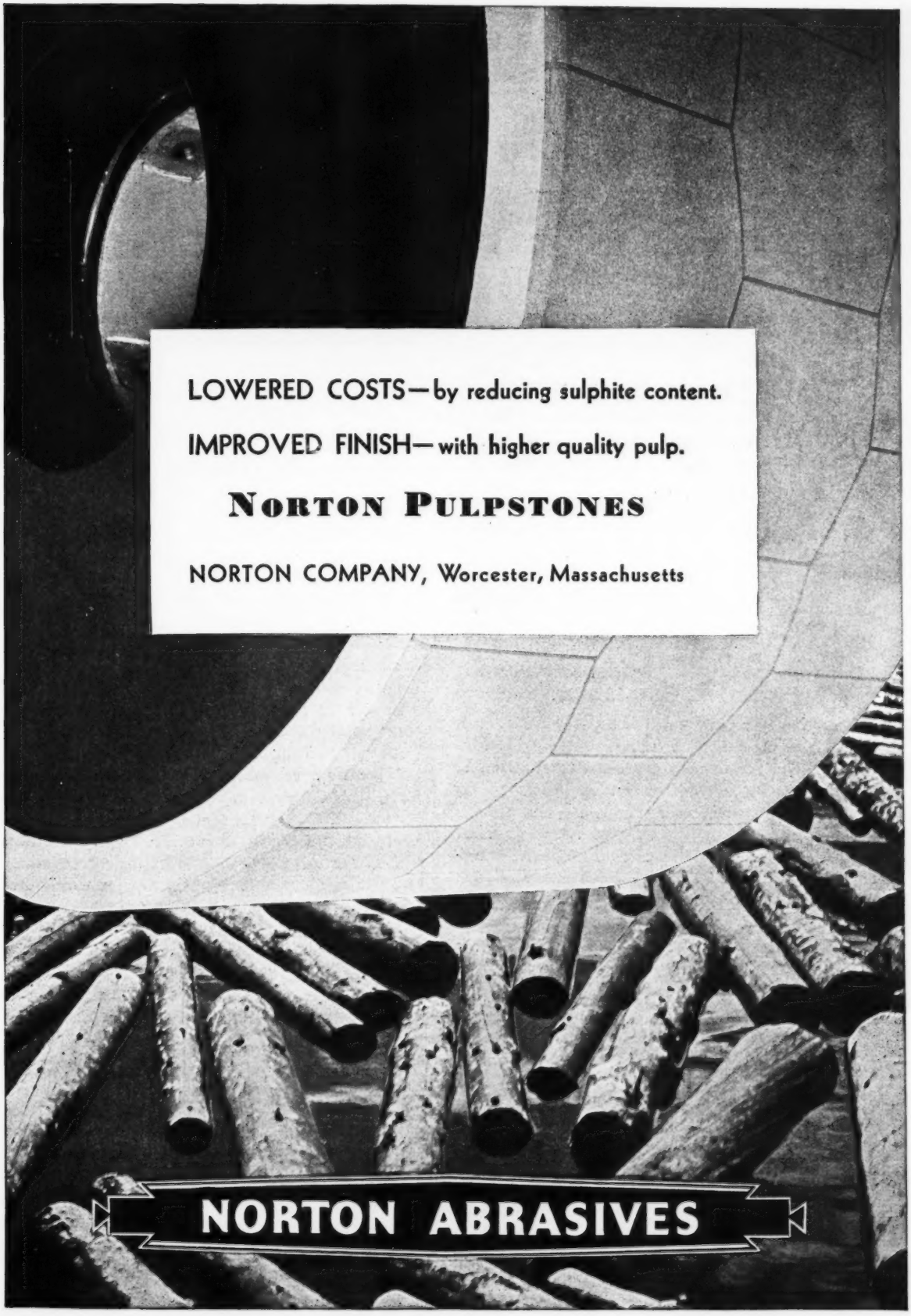
Acquires Ravenswood Mill

The Continental Paper Company acquired possession of the plant of the Ravenswood Paper Mill Company, Inc., of Long Island City, New York, September 24, 1938. Temporarily the mill has been closed down for a thorough renovation and overhauling. When the volume of business picks up the Long Island plant will undoubtedly resume operations.

In the meantime Continental's main plant at Ridgefield Park, New Jersey, has capacity to serve the Ravenswood customers. Mr. Milton Kovner and the other members of the Ravenswood sales force have joined that of Continental Paper Company and from the larger, better equipped plant and with a more varied line will endeavor to equal or indeed surpass the enviable record of service of the Ravenswood Paper Mill Company, Inc.

Northwest Superintendents To Meet

The Northwest Division of the American Pulp and Paper Mill Superintendents Association will meet at the Lorraine Hotel, Madison, Wis., October 21-22. The cooperation of the U. S. Forest Products Subsidiary at Madison offers an exceptional opportunity to both practical and technical men. At this meeting will take place the premiere showing of the film entitled "Paper-Making on the Swirling Flambeau". This film was made during the famous river trip made by papermakers as a finale to the spring convention at Park Falls, Wis.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ESTABLISHED 1872

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Washington Correspondent

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Vol. CVII New York, October 6, 1938 No. 14

COMING EVENTS IN THE PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

CAPITAL AND LABOR

An opinion frankly stated and based upon direct thinking on the nation's economic problems is an interesting and informative expressed contribution to current thought, whether or not we concur in the opinions. And when such comment comes from a business man who is a close observer, a capitalist and also a worker, the views expressed quite naturally become of wide interest. Such is the address on capital and labor by William Allen White, publisher and editor of *The Emporia Gazette*, of Emporia, Kansas, at the Seventh International Management Congress, which met at Washington, D. C. on September 20. In prescribing for capital and labor Mr. White pointed out that both sides are at fault in industrial conflicts and that mutual sacrifices are necessary to attain peace, prosperity and the preservation of liberties.

In opening his address Mr. White said: "In this discussion I am supposed to represent the public, the American consumer. He is a mythical character who never lived on land or sea, but for that matter, the capitalist is a myth and the worker's status is an economic hypothesis. It is trite to say that in America we are all more or less owners, all workers of high or low degrees, and certainly we are all consumers. We are all the children of John Q. Public, and our interests as members of the consuming public are after all our chief end and objective as citizens of our democracy. I, myself, who am speaking for the public, today own a little business which employs forty people, that requires a pay roll of a thousand or twelve hundred dollars a week. But on the other hand I show up at my office as a worker at a quarter of eight every morning and go home at half past five every evening, and once, more than fifty years ago, I was a practical printer who worked on a 12-hour day. Therefore I am probably a perfect type of the public, typically perfect because I am typically both laborer and capitalist.

"Let me begin by telling you both, laborer and capitalist, that you have got us citizen consumers in a pretty sad mess. Every time we consumers think of what one of you has done we are dead sore at each of you until we begin to think of what the other has done. Let me start on capital, the employer. Not that he is more to blame than labor. But he is more responsible. He enjoys more freedom. He could have done better. You employers have wasted twenty years since the end of the World War. In those twenty years, a little intelligent self-interest, a little foresight—not much—would have solved equitably the problems that are now pressing upon us, problems that have been adjusted in haste, and in the emergency of calamity. Take the eight-hour day. You knew that it was coming . . . Take the old age pension and job insurance to cover seasonal and technological unemployment. Another thing we should remember in this dark hour: As far back as 1920, and again in 1928, and again in 1932, the national platforms of the Republican and Democratic parties demanded laws authorizing for workers 'the right of collective bargaining with representatives of their own choosing'. Those were the very words. It was the part of wisdom for a certain strong militant organization of American enterprises to lend the force and wisdom of their organization to some law or extra legal institution which then would have answered that widespread demand. But no, the organized American enterprisers balked like mules.

"Now peace and justice is not impossible today. A just peace is harder to achieve today than it would have been for instance in the days of the Coolidge bull market or under the leadership of Herbert Hoover. But it still is possible. Private enterprise in industry survives in the Scandinavian countries with collective bargaining effectively channeled by fair laws and decent administration."

In touching on the subject of vertical unions Mr. White said in part: "It is one thing to strive for a fair and equitable share of the earnings of industry and to demand it with whatever industrial weapon is necessary even to the strike and the orderly picket line. Your speaker happens to believe in the effi-

ciency of the vertical union in mass production. It will have to come. But we don't need a revolution to get the vertical union. Labor need not go class-conscious. The blessed Lord knows that capital has made its mistakes and is paying for them, paying through the nose. But labor has been no Solomon. The proper business of a labor union is to get higher wages, better hours and good shop conditions for the workmen. But when labor en masse plunks its vote for its own party, then the spirit of party loyalty begins to obscure labor's objectives—high wages, short hours, decent shop conditions. Thus class-conscious labor leaders become more interested in their party welfare than in the fundamental objectives of labor unions. So we shall have the class-conscious political worker trading his vote, not for the immediate objective of wages, hours, and shop conditions, but for power for his political labor boss."

In declaring that conflict of classes should be avoided, Mr. White said in part: "Let us not blame labor too much for a growing class-consciousness. We must not forget the arrogance of class-conscious plutocracy which has functioned in our democracy since the Civil War—a small group but powerful. It turned to politics secretly. It has struggled against every measure that in any way cramped its aggressive development. The example of that small group probably gave labor its excuse for political action. That small heavily entrenched group did not hold the ownership of industry. The ownership of industry was nation wide, a popular economic democracy. The management of industry in this generation has been intelligent. It has tried to be fair."

In stating that radicalism was caused by a controlling group, Mr. White said in part: "I take no stock in the nonsense about the 'Sixty Families'. They are as negligible in the real problem as the Communists. It was the control of industry, the banker control if you will, which too often made its legal department a political hierarchy and turned furtively to the control of politics in high places. That small group in politics slowly but surely, first disgusted the American people, then angered them, until in their wrath they turned in calamity to rampant, unchecked radicalism. Out of the crisis that came with the blunders of democracy emerged the class-conscious proletariat, somewhat subsidized and controlled by politicians at Washington. But let me say this to class-conscious labor. It should know that the same patriotic indignation which turned upon a federal class-conscious plutocracy and wrecked its power, will turn upon a class-conscious proletariat and deny its aims."

In pointing out that industrial peace and prosperity must depend upon compromise and cooperation between capital and labor, Mr. White said in part: "This is a middle class country and the middle class will have its will and way. For the middle class is the real owner of American industry. The middle class is also 80 per cent worker and the consumer of 80 per cent of American industrial production in the home market. And before the middle class demands an increase in either interest for investors or higher wages for the worker, the middle class will demand fair prices and a stable industry. That means industrial peace."

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Months	1938(c)	1937(c)	1936	1935	1934
January	63.9%	90.3%	76.1%	65.8%	.....
February	68.7%	90.1%	77.9%	70.0%	.....
March	69.6%	90.3%	76.0%	70.5%	.....
April	68.3%	92.1%	82.3%	70.0%	.....
May	69.0%	90.6%	81.6%	69.4%	.....
June	65.8%	87.3%	80.7%	72.3%	.....
July	71.9%	81.8%	77.3%	64.9%	.....
August	77.1%	82.9%	81.5%	70.9%	.....
September	.....	78.6%	80.5%	71.9%	58.2%
October	.....	73.5%	87.6%	75.6%	64.7%
November	.....	61.9%	88.0%	75.3%	61.7%
December	.....	54.5%	85.9%	71.2%	59.6%
Year Average	.....	80.6%	81.3%	70.5%	.....
First 38 weeks	69.8%	87.1%	79.3%	69.3%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS. 1938		CORRESPONDING WEEKS. 1937	
*August 20	78.1%	August 21	83.7%
*August 27	79.6%	August 28	83.3%
*September 3	77.4%	September 4	80.7%
*September 10	65.8%	September 11	68.7%
*September 17	79.4%	September 18	82.7%
*September 24	80.9%	September 25	81.9%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks					
Ratio Limits	Aug. 20, 1938	Aug. 27, 1938	Sept. 3, 1938	Sept. 10, 1938	Sept. 17, 1938	Sept. 24, 1938
0% to 50%	85	80	81	89	67	67
51% to 100%	220	226	220	203	216	142
Total Mills Reporting	305	306	301	292	283	209

* Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported by individual companies.

Paperboard Operating Ratios

According to reports from the National Paper board Association, per cents of operation, based on "Inch-Hours", were as follows:

Mos.	1938 (e)	1937 (e)	1936	1935	Mos.	1938 (e)	1937 (e)	1936	1935
Jan.	55%	80%	61%	61%	July	57%	67%	69%	59%
Feb.	61%	86%	67%	67%	Aug.	66%	74%	75%	65%
Mar.	60%	87%	68%	67%	Sept.	....	70%	76%	69%
Apr.	57%	89%	70%	61%	Oct.	....	66%	82%	76%
May	58%	86%	68%	61%	Nov.	....	56%	79%	70%
June	56%	75%	68%	65%	Dec.	....	46%	74%	60%

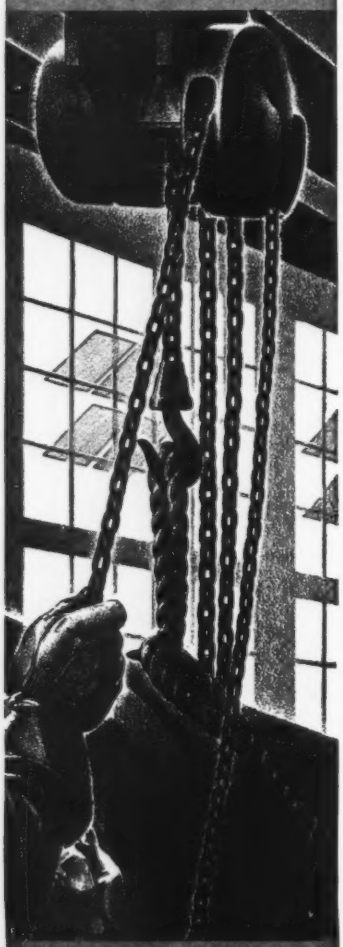
Week end. Aug. 20, 1938—67%
Week end. Aug. 27, 1938—69%
Week end. Sept. 3, 1938—67%
Week end. Sept. 10, 1938—57%
Week end. Sept. 17, 1938—71%
Week end. Sept. 24, 1938—68%

(e) Basic figures revised to include new members of the National Paperboard Assn.

Champion Paper Reports Loss

Champion Paper and Fibre Company and Subsidiaries reports as follows for the sixteen weeks to August 14: Net loss $151,902, against net profit of $922,487, or $1.41 a share on 551,000 common shares after preferred dividend requirements for sixteen weeks to August 15, 1937.

PRODUCTION
GETS
A LIFT



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30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

Section of the Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Review Of The Paper Industry Literature

Abstracts Compiled By the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman.

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Sulphite Process

The Quality and Quantity of Cooking Acid in Sulphite Pulping at Increased Wood Packing Density of Digester. O. K. Giller. Bumazhnaya Prom. 15, no. 8:39-43 (1937); C. A. 32:2346.—The economical and technical advantages of sulphite cooking of chips packed with a compactness exceeding the normal capacity of the digester are discussed in relation to various factors, such as consumption of steam, moisture content of the chips, the ratio and concentration of the sulphite liquor, etc. In general, the pulping is improved and the acid loss is decreased by the use of a more highly concentrated acid and a decreased number of blow-off reliefs. The forced circulation of sulphite liquor has not been tried, though it is considered indispensable. Considerable economy can be effected by recovery of relief acid, smaller ratio of tower acid and lower steam consumption. The commercial application of the method is being studied.—C.J.W.

The Effect of Sulphite Liquor Composition on the Rate of Delignification of Spruce Wood and Yield of Pulp. J. M. Calhoun, F. H. Yorston and O. Maass. Can. J. Research 15B: 457-474 (1937).—A technic has been devised for studying the delignification of wood in sulphite liquor under accurately controlled conditions. The rate of delignification of spruce wood meal extracted to remove resin was determined at 130°C. over the concentration range of 0.2 to 1.4% combined and 2 to 14% total sulphur dioxide. The reaction shows a systematic deviation from the first-order relation that is the same for any composition of liquor. A quantitative relation between the rate of delignification and the concentration of free sulphur dioxide or better, the partial pressure of sulphur dioxide gas, was established. The nature and significance of this relation are discussed in connection with the mechanism of the delignification process. It is shown that the hydrogen-ion concentration alone does not determine the rate of cooking, and evidence is presented which indicates that the product of the hydrogen and bisulphite ion concentration is the controlling factor. The yield of pulp for any given lignin content is independent of the free sulphur dioxide over the whole concentration range, but increases in a marked manner with the concentration of the combined sulphur dioxide.—A.P.-C.

The Use of Liquid Sulphur Dioxide in the Production of Sulphite Pulp. V. V. Naumov. Bumazhnaya Prom. 15, no. 7:32-39 (1937); C. A. 32:346.—The technical and economical advantages of the use of liquid sulphur dioxide in sulphite pulping are discussed.—C.J.W.

Troublesome Compounds and Reactions of Sulphur. C. F. B. Stevens, Pulp Paper Mag. Can. 39:133-137 (Feb., 1938).—The various methods used to detect and determine the different forms of sulphur in the burner gases, liquor, limestone and pulp are described. The manufacture and processing of sulphite pulp is followed step by step, showing the possibility of the presence of troublesome sulphur residues and indicating means for ensuring their elimination. The analytical data are presented in tabular and graphical forms. *Conclusions:* the presence of troublesome sulphur compounds in the pulp can be attributed in the main to overproduction; rushing the acid plant produces free sulphur; accelerating the cook introduces calcium sulphite; incomplete washing leaves residual sulphur dioxide; doctoring the pulp to remove these later is at best an uncertain cure.—A.P.-C.

Production of Cellulose. Georges Robrieux. Fr. pat. 817,645 (Sept. 7, 1937).—Wood or other cellulosic material is treated under high pressure with an aqueous solution of sulphur dioxide, the solution being drawn off continuously, regenerated in a distillation apparatus where nonvolatile products are separated, and returned to the cooking vessel. The cellulose and incrusting materials are thus obtained in two separate vessels.—A.P.-C.

Method for Determining the Fermentable Sugars in Sulphite Waste Liquors. R. Schepp and G. Kretzschmar. Angew. Chem. 51, no. 8:79-81 (Feb. 5, 1938); B. I. P. C. 8:312.—The method described is based upon fermentation of the sample of sulphite waste liquor in a special flask. The carbon dioxide formed is swept by a stream of nitrogen through calcium chloride drying tubes and into a

tube containing soda lime. The weight of fermentable sugars is found from the weight of carbon dioxide formed. The method is applicable to solutions containing small quantities of sugars in the presence of other reducing materials, where ordinary methods fail. Reproducibility within 0.01 per cent-0.03 per cent sugar has been obtained in solutions containing up to 3 per cent sugar.—C.J.W.

Sulphite Lyes as Core Oils. A. N. Shchelokov. Russian patent 45,042 (Nov. 30, 1935); C. A. 32: 2894.—The hygroscopicity of the sulphite lye extract is reduced by the incorporation of 0.2 to 0.7 per cent of No. 00 cement on the weight of the ore sand.—C.J.W.

Use of Sulphite Extract as Core Binder. Yu. Ya Finarti. Liteinoe Delo 7, no. 7:31-39 (1936); C. A. 32:2482.—A comprehensive investigation to determine the suitability of sulphite extract produced in paper manufacture for core-binding purposes, both when used alone and in combination with other commonly known binders. With its use cores stick to core boxes and the quality of cores produced low, though in emergency cases the substance can be used as a binder.—C.J.W.

Process for the Purification of Sulphite Waste Liquor and Waste Waters Containing Such Materials. F. Sierp, Essen. Ger. pat. 647,234 (April 21, 1934). The material to be purified is first treated with an alkalizing medium, such as calcium carbonate, sodium or potassium hydroxide, ammonia, and then with a water soluble solvent, for example, alcohol. The material separating out is removed from the liquid and the solvent again used.—J.F.O.

Concerning the Manufacture of Forage Yeast from Sulphite Waste Liquor. Hermann Fink. Wochbl. Papierfabr. 68, no. 48:907-09 (Nov. 27, 1937). Forage yeast, prepared from the cheap sulphite waste liquor, is without doubt the cheapest albumin that can be prepared, considering the price of the raw material, in Germany by the biological synthesis method. Numerous facts concerning the economical status of the process are given.—J.F.O.

Use of Sulphite Waste Liquor in the Manufacture of Clear Soap. K. Braun and H. Plauson. Brit. pat. 470,254 (Feb. 7, 1936).—The crude sulphite waste liquor is brought into reaction with bleaching power (or slaked lime and chlorine gas), e.g., in a colloid mill or by heating, and the mixture is neutralized with an acid (sulphuric, phosphoric, oxalic) which forms an insoluble calcium salt; after filtering off the precipitate, the purified liquor is oxidized (with ozone or hydrogen peroxide), concentrated, (e.g., by evaporation or by treatment with anhydrous gypsum), and incorporated in a ready-made (but still liquid) soap.—A.P.-C.

Tanning Power of Sulphite Pulp Extracts. W. Grassmann, A Miekely, H. Schelz and V. Windbichler. Collegium, 1937: 136-152; Halle Aux Cuirs, Feb., 1938: 34-38.—Adsorption curves (mg. tannin plotted against g. of hide powder) for vegetable tannins and for sulphite waste liquor extracts show that the latter have much less affinity for hide powder than the least astringent tannins. Sulphite extracts, like syntans, unite with basic groups of hide while vegetable tannins do not. The sulphite extracts investigated could not be used alone for tannin but could be used to advantage in mixtures and could replace considerable vegetable tannin without influencing adversely the quality of the leather. A mixture of lignin-sulphonic acid and vgetable tannin reacts as a new material and does not show the properties of the components.—A.P.-C.

Progress In Rayon Pulp Manufacture. C. L. Moore. Rayon Textile Monthly 18: 590-592, 694-696 (1937).—Developments in the sulphite process are discussed from the standpoint of the chemical reactions involved.—A.P.-C.

The Requirements of Sulphite Pulp in Folding Box Board Manufacture. Philip W. C. Codwise. Pulp Paper Mag. Can. 39: 124-125 (Feb., 1938).—The important properties can be grouped as follows: (1) easily bonding, flexible fiber, (2) long fiber which has good strength with little beating, (3) good color, and (4) cleanliness.—A.P.-C.

Sulphite Pulp for Fine Papers. G. I. Hoover. Pulp Paper Mag. Can. 39. 120-123 (Feb., 1938).—A description of the characteristics of the types of sulphite pulp available in Canada for use in fine papers and of the effect on these pulps of the mechanical treatment which they receive during the course of their manufacture into paper, together with a discussion of some of the desirable characteristics of sulphite pulps for fine papers and suggestions of possible means of improving their manufacture and utilization.—A.P.-C.

Manufacture of Artificial Silk. Oskar Wahlberg. Papir-J. 26, no. 3:28-31 (Feb., 24, 1938); B. I. P. C. 8:308.—With brief reference to the newly established Norwegian rayon mill at Notodden, a general description of the manufacture of rayon and staple fiber according to the three most common processes, viscose, cuprammonium, and acetate processes, is given. The Notodden mill employs the viscose process; the individual steps of manufacture and special requirements of the pulp are reviewed.—C.J.W.

Mechanical Process

Methods of Evaluating the Degree of Dispersion and the Structure of Ground Wood Pulp. M. I. Koifman and O. V. Solov'eve-Almazova. Bumazhnaya Prom. 15, no. 5:20-29 (1937); C. A. 32:3245.—From the classification of groundwood pulp by the fractional screening tests with standard wire cloth screens, the structure and the degree of dispersion or specific surface area of the pulp can be evaluated according to the mean fiber length and diameter of the fractions. The analysis of the effect of power consumption in grinding in relation to the pulp surface unit gives a truer value of the grinding efficiency than that in relation to the pulp weight unit.—C.J.W.

Rationalization of wood grinding and sorting of ground wood pulp. V. Ya. Tyagunov. Bumazhnaya Prom. 15, no. 7:54-60 (1937); C. A. 32:2346.—The construction and performance of a German grinding machine (Russ. patent 40,879 (1934)) and a Canadian sorting machine (Russ. patent 42,938 (1935)) are reviewed.—C.J.W.

Manufacture and use of pulpstone in the Soviet Union. M. I. Koifman. Bumazhnaya Prom. 15, no. 8:52-59 (1937); C. A. 32:2347.—The construction and performance of Soviet cemented sandstones and European, American and Canadian ceramic stones are critically discussed.—C.J.W.

Cellulose and hemicellulose. S. A. sudakov. Russian patent 45,161 (Nov. 30, 1935); C. A. 32:3148.—The raw material (wood waste, straw, etc.) is broken up and treated with or without heating with caustic

solutions and ground with mill stones or rollers, etc.—C. J. W.

Data for Grinding Control. J. Edwards, H. A. DeLuca and H. W. Johnston. Pulp Paper Mag. Can. 39:91-95 (Feb., 1938).—A method has been developed (and is explained) for expressing stone sharpness numerically, thus making possible the correlation of grinding data in a form useful for predicting the effects of various combinations of operating conditions. Curves are given showing the effects of production rate on energy consumption, burst strength (Mullen), white water content, freeness and the energy-quality factor; and from these further curves are obtained and given showing the relationship between the sharpness factor and energy consumption, burst test, etc.—A.P.-C.

Analyses of the Grinding Action. J. Edwards, H. A. DeLuca and H. W. Johnston. Pulp Paper Mag. Can. 39:96-98 (Feb., 1938).—Experimental evidence is offered to prove that dulling a stone face by grinding entails the formation of a rounded contour to the leading edges of the grits. The action of these rounded edges is compared to the action of a beater and certain similarities are noted; but this similarity should not be stressed unduly. From a discussion of the possible role played by the heat produced in the grinding stone and from the results of experiments, it is concluded that the increased plasticity of wood at high temperatures facilitates the removal of fibers, thus increasing freeness, fiber length, Paterson number, and production.—A.P.-C.

Rosin Difficulties in the Production and Use of White Ground Wood from Pine Wood. Kurt Schwabe. Wochbl, Papierfabr. 68, no. 48:909-13 (Nov. 27, 1937).—The author discusses the pine-spruce wood situation in Germany, growth and consumption of each. Several methods for the removal of the troublesome rosin are described but are discarded as being economically impractical, among such being the use of solvent. The author then gives a method in which an earth alkali is used during the grinding of the pine logs; barium hydroxide being most suitable and this is added to the water to the stone. Ground wood from pine thus produced does not give any difficulties in the manufacture of paper, even if used in quantities up to 45 per cent in the paper. Tests made on spruce and pine wood papers are tabulated.—J.F.O.

Miscellaneous Digesting Processes

Manufacture of Cellulose from Lignin-Containing Cellulose Materials. H. Dreyfus. Brit. pat. 477,842 (July 3, 1936).—Cellulose suitable for the manufacture of paper, cellulose esters and ethers, etc., may be obtained from various woods, wood pulps, straw, grass, etc., by simultaneously treating them with a lower fatty acid and nitrous acid in aqueous solution at not more than 100°C., followed by treatment with alkali. The nitrous acid (0.25 to 5 per cent, on the weight of the fatty acid or its aqueous solution) may be used as such, or formed *in situ* from sodium nitrate or potassium nitrite and fatty acid or a mineral acid. Acetic acid of 15 to 75 per cent concentration is used.—A.P.-C.

Bagasse. XI. Picric Acid Isolated from the Waste Acid of the Nitric Acid Pulping Process. Y. Hachihama and W. Takemura. J. Soc. Chem. Ind. Japan 40: 354-355B (1937).—By increasing the nitric acid concentration the yield of nitrophenols was increased and with 40 to 65 per cent nitric acid the yield was 3.8 to 3.9 per cent mainly of picric acid. Previous solvent extraction of the bagasse did not affect the yield, and it is assumed that the starting material is phenol derived from lignin.—A.P.-C.

Bagasse. XII. Bagasse Pulp Prepared by the Nitric Acid Process (Suppl.). Y. Hachihama and W. Takemura. J. Soc. Chem. Ind. Japan 40: 355B (1937).—The cuprammonium viscosity of pulp prepared by the nitric acid process is somewhat lower than that prepared by other processes; the mean fiber length is 1.248 mm. and diameter 0.0187 mm.—A.P.-C.

Disintegrating Vegetable Fibrous Materials. Theodor Kleinert. Fr. pat. 815,651 (July 20, 1937).—The materials are subjected to a treatment with steam and oxygen or air, for a more easy solubilization of the lignins and incrusting substances. This is followed by treatment with the usual disintegrating or solvent agents.—A.P.-C.

Bleaching

Developments in Multi-Stage Bleaching of Wood Pulp. M. W. Phelps and John Schuber. Paper Trade J. 106, no. 8: 126-130 (Feb. 24, 1938).—A brief discussion of most recent developments. A system producing high pulp color and chemical economy comprises the following stages: (1) chlorination, (2) caustic extraction, (3) hypochlorite combined with caustic extraction, (4) hypochlorite. One embodiment of this system is briefly described; it may be modified to suit mill preference or equipment, or the sequence of stages may in some cases be altered.—A.P.-C.

The Chemistry of Bleaching Chemical Wood Pulp. John D. Rue. Trans. Electro-Chem. Soc. 73, 13 pp. (preprint) (1938).—Modern bleaching of chemical wood pulps is stepwise purification of colloidal cellulose. Lignin is removed by chlorination supplemented by some oxidation. Water-insoluble chlorinated products are solubilized with sodium hydroxide. Other coloring matter is rendered colorless by oxidation. The action of chlorine gas is directed towards chlorination or oxidation and its harmful attack on celluloses is minimized chiefly by adjustments of the pH and of temperature. Diffusion and adsorption affect rates of reaction and play important roles in the removal of solubilized products.—A.P.-C.

Bleached Sulphate Pulp. Hervey J. Skinner. Ind. Eng. Chem. 30: 318-320 (March 1938).—A brief outline of the development and present status of the production of bleached sulphate (kraft) pulp.—A.P.-C.

Investigations Concerning the Bleaching of Selphate Pulp. N. A. Rosenberg and A. G. Laube. Zellstoff U. Papier 17, no. 12: 534-38 (Dec., 1937). Four samples of sulphate pulp of different and widely varying degrees of cooking were bleached by many different methods; single stage, multiple stages, with chlorine gas, with hypochlorites and combinations. The effect of the factors influencing bleaching were studied and the results on the pulp properties were tabulated and discussed. Experiments were then conducted on a mill scale and these results were also tabulated and discussed.—J.F.O.

Bleaching, Refining and Drying of Pulp. N. A. Baranov and G. M. Orlov. Bumazhnaya Prom. 15, no. 7:20-32 (1937).—A discussion based on foreign practice.—C.J.W.

Sulphite Pulps from Heartwood and Sapwood of Several Growth Types of Western Hemlock*

By J. N. McGovern [1] and G. H. Chidester [2]

Abstract

The yield of sulphite pulp from western hemlock sapwood was found to be from 3.2 to 6.7 per cent higher than from heartwood from the same tree. Sapwood pulps had in general, higher tearing but slightly lower bursting and tensile strengths than heartwood pulps.

Introduction

As sapwood is transformed into heartwood in the living tree, certain physical and chemical changes take place which give rise to differences between the two portions of a tree that affect the yield and quality of sulphite pulps prepared from the two types of wood. This report is concerned with such pulping differences between the heartwood and sapwood from western hemlock *(Tsuga heterophylla)* of several growth types.

While considerable information is available on the sulphite pulping of heartwood and sapwood of certain species, such as the pines, only a small amount of data has been obtained on the more common pulpwood species.

In general for softwoods, as Ritter and Fleck *(7)* have pointed out, the water, ether, and alkali extracts are higher in heartwood than in sapwood, and as a result the lignin and cellulose contents are correspondingly lower in heartwood (except in white spruce where the lignin and cellulose contents of the two portions of the tree are approximately the same).

The yield and quality of pulps from the heartwood and sapwood of species commonly used in sulphite pulping have been compared in several instances. Hägglund and Hansen *(4)* found no appreciable differences in the yield or strengths of pulps from spruce heartwood and sapwood, although the average fiber lengths of the two woods varied considerably. On the other hand, Klem *(5)* reported Kinnman to have obtained yields of 44 per cent from heartwood and 48 to 50 per cent from sapwood.

Experimental Part

The yields and properties of pulps from heartwood and sapwood were compared in these experiments by means of digestions of western hemlock of three growth types. The types consisted of young, rapid-growth wood and old, slow-growth, and very young, very rapid-growth wood. The physical and chemical properties of the whole woods from which the heartwood and sapwood samples were obtained have already been described *(1, 2)*. The chemical properties of the heartwood and sapwood pulped in this study are presented in Table I.

The effect of heartwood and sapwood in pulping was compared by making three series of digestions, numbered A, B, and C, differing in the maximum temperature used or in the temperature rise to the maximum temperature. The conditions used in these experiments are tabulated in Table II. A 50-pound capacity digester *(6)* was used, described in a previous report. Sufficient heart and sapwood of the young, rapid-growth wood was available to make full-scale semicommercial digestions in series A and B, one digestion being made of each kind of wood at the two temperatures. The two types of wood in series C, however, were cooked in baskets placed in the semicommercial digester as previously described *(6)*. In the latter instance, two identical digestions

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TABLE I.—CHEMICAL ANALYSIS OF WESTERN HEMLOCK HEARTWOOD AND SAPWOOD

Wood			Alpha cellulose	Cellulose	Lignin	Pentosans		Solubility in			
Type	Age class	Growth class	Per cent	Per cent	Per cent	Total Per cent	In cellulose Per cent	Alcohol-benzene Per cent	Ether Per cent	One per cent NaOH Per cent	Hot water Per cent
Heartwood	Old	Slow	43.3	55.5	27.4	8.0	6.1	10.0	2.0	20.1	8.1
Sapwood	Old	Slow	45.2	59.8	27.8	9.1	6.5	2.4	.7	12.8	3.0
Heartwood	Very young	Very rapid	42.6	57.3	30.3	8.5	7.0	2.8	.8	13.4	3.6
Sapwood	Very young	Very rapid	44.1	60.7	28.4	8.3	6.1	1.7	.6	11.8	2.7
Heartwood	Young	Rapid	43.4	57.8	31.8	8.3	..	4.5	.2	14.4	3.5
Sapwood	Young	Rapid	41.7	58.9	30.1	8.4	..	2.1	.2	12.1	2.2
Heartwood	Average growth, all types		43.1	56.9	29.5	8.3	6.5	5.8	1.0	15.6	5.1
Sapwood	Average growth, all types		43.7	59.8	28.8	8.6	6.3	2.1	.5	12.2	2.6

TABLE II.—DIGESTION CONDITIONS USED IN PULPING WESTERN HEMLOCK HEARTWOOD AND SAPWOOD

	Wood type		Acid								
Series	Age class	Growth class	Total SO_2 Per cent	Free SO_2 Per cent	Combined SO_2 Per cent	Time to 110 deg. C. Hours	Time at 110 deg. C. Hours	Time to maximum temperature Hours	Total digestion time Hours	Maximum temperature Deg. C.	Maximum pressure Pounds per square inch
A	Young	Rapid	5.5	4.25	1.25	2.0	0	8	11.0	148	65
B	Young	Rapid	5.5	4.25	1.25	2.0	0	10	13.5	140	65
	Old	Slow									
C	Very young	Very rapid	5.5	4.35	1.15	1.5	1	4	9.5	140	75

TABLE III.—SERIES A AND B.—YIELDS, BLEACH REQUIREMENTS, AND STRENGTH PROPERTIES OF SULPHITE PULPS FROM WESTERN HEMLOCK HEARTWOOD AND SAPWOOD.

Wood: Type	Wood: Age class	Wood: Growth class	Yield of pulp: Total	Yield of pulp: Screened	Yield of pulp: Screenings	Bleach required for 85 parts blue, Per cent standard bleach powder	Pebblemill strength tests 25x40—500 ream: Bursting strength after milling: 0 min.	20 min.	40 min.	60 min.	80 min.	100 min.	Tearing strength after milling: 0 min.	20 min.	40 min.	60 min.	80 min.	100 min.	Folding endurance after milling: 0 min.	20 min.	40 min.	60 min.	80 min.	100 min.	Tensile strength after milling: 0 min.	20 min.	40 min.	60 min.	80 min.	100 min.
			Per cent				Points per pound per ream						Grams per pound per ream						Double folds						Pounds per square inch					
Series A.	Maximum temperature 148 deg. C.																													
Heartwood	Young	Rapid	47.2	45.8	1.4	15	0.21	0.76	1.02	1.27	1.30	1.24	1.56	2.94	3.31	2.56	2.44	2.15	2	114	696	841	1224	1184	1547	3127	4287	4952	4990	5335
Sapwood	Young	Rapid	47.7	47.4	.3	13	.23	.60	.88	1.11	1.18	1.12	1.31	3.05	3.43	3.01	2.72	2.37	2	32	117	333	1014	1264	1759	2230	3410	4430	4537	4562
Series B.	Maximum temperature 140 deg. C.																													
Heartwood	Young	Rapid	47.1	46.6	.5	11	.29	.88	1.01	1.19	1.19	....	1.62	3.35	3.10	2.82	2.87	....	4	450	569	621	1296	....	1815	3372	3707	5017	4247	5025
Sapwood	Young	Rapid	48.5	48.1	.4	8	.17	.65	.96	1.13	1.20	1.11	1.42	3.07	3.85	3.44	2.75	2.31	1	35	454	1110	1426	1232	1274	2536	3887	4460	4187	

were made of the heartwood and sapwood samples, although the duplicate pulps were subsequently mixed for the strength and bleach tests.

For evaluation the various pulps were bleached and tested according to the methods standard at the Forest Products Laboratory *(3)*. The pulps from the young, rapid-growth wood in series A and B were processed in a pebble mill and the pulps from the other two types of wood in series C were processed in both the pebble mill and beater. The data from all these tests are found in Tables III and IV.

Discussion

Chemical Properties of the Wood

The chemical properties of the western hemlock heartwood and sapwood used in these experiments differed in several respects (Table I). The heartwood in the wood of all types contained an appreciably lower amount of cellulose than the corresponding sapwood, the difference ranging from 1 per cent in the young, rapid-growth wood to 4 per cent in the old, slow-growth wood. In the old, slow-growth and very young, very rapid-growth woods the alpha-cellulose content of the heartwood was also lower than that of the sapwood, while the reverse was noted for the young, rapid-growth wood. In the two rapid-growth woods the lignin content was higher in the heartwood while in the slow-growth wood there was little difference. The extractives content of the heartwood from all the wood types was considerably higher than that of the corresponding sapwood; this difference was especially pronounced in the old, slow-growth wood.

Time of Pulping

The generally higher lignin content and lower permeability of the heartwood might be expected to result in a somewhat slower pulping rate for this wood as compared with the sapwood in the production of pulps of equal bleach requirement. Actually, this proved to be only partially true. The heartwood from the young rapid-growth wood was pulped slightly more slowly than the corresponding sapwood as shown by the higher bleach requirements (2 to 3 per cent) of the heartwood pulps produced at 140 and 148 deg. C. On the other hand, the heartwood and sapwood from the other two types were pulped in the same time as shown by their identical pulp bleach requirements.

Pulp Yields

The pulp yields from the sapwood were higher than those from the corresponding heartwood for all the types of wood digested. The screened yield of sapwood pulp from the young, rapid-growth wood was 3.5 per cent (pulp basis) higher in series A and 3.2 per cent higher in series B than that of the corresponding heartwood pulps; this spread was slightly greater when the yields were adjusted from the small differences in bleach requirement. The other two types of wood in series showed an even greater difference in pulp yield from sapwood and heartwood; the yield of sapwood pulp from the old, slow-growth wood exceeded that of heartwood pulp by 6.7 per cent and the yield of sapwood pulp from the very young, very rapid-growth wood exceeded that of heartwood pulp by 5.5 per cent. These results are in accordance with the cellulose and extractives contents of the various wood samples.

Pulp Strengths

The heartwood and sapwood pulps produced in these experiments differed quite definitely in some respects. In general the heartwood pulps had higher bursting and tensile and lower tearing strengths than the corresponding sapwood pulps. The following more detailed discussion of the strength properties of the various pulps is based on pebble mill data from different milling periods in series A and B (Table III) and beater data at two processing freenesses, 800 cc and 550 cc, in series C (Table IV). (Complete pebble mill data were not compiled for series C and these data are, therefore, omitted from this report.)

Bursting Strength

When the young, rapid-growth heartwood and sapwood were pulped at 148 deg. C. (series A), the resulting pulps had the same initial bursting strength, but as the pulps were processed in the pebble mill the heartwood pulp immediately developed a higher bursting strength value and maintained this advantage throughout the milling; both pulps milled at the same rate. When these same woods were pulped at 140 deg. C. (series B) the heartwood pulp had a higher initial bursting strength and a higher early developed strength, but had the same maximum strength as the sapwood pulp. The beater tests of the heartwood and sapwood pulps from the old, slow-growth wood (series C) showed the heartwood pulp to have a considerably higher bursting strength at both freenesses. In contrast to this finding, the

TABLE IV.—SERIES C.—YIELDS, BLEACH REQUIREMENTS, AND STRENGTH OF SULPHITE PULPS FROM WESTERN HEMLOCK HEARTWOOD AND SAPWOOD

Wood			Yield of Pulp			Bleach required for 85 parts blue, Per cent standard bleach powder	Beater strength tests 25x40—500 ream									
							Bursting strength Freeness S.R.		Tearing strength Freeness S.R.		Tensile strength Freeness S.R.		Solid fraction Freeness S.R.		Beating time Freeness S.R.	
Type	Age class	Growth class	Total	Screened Per cent	Screenings		800 cc.	550 cc.	800 cc.	550 cc.	800 cc.	550 cc.	800 cc.	550 cc.	800 cc.	550 cc.
							—per ream— per pound Points		—per ream— per pound Grams		—square inch— Pounds per				Minutes	
Heartwood	Old	Slow	42.7	41.9	0.8	20	1.22	1.56	1.70	1.25	7700	12600	0.49	0.56	22	70
Sapwood	Old	Slow	44.9	44.7	.2	20	1.04	1.39	1.85	1.40	6200	11000	.50	.60	20	72
Heartwood	Very young	Very rapid	44.2	44.0	.2	18	1.24	1.46	1.40	1.25	9500	12200	.52	.61	27	82
Sapwood	Very young	Very rapid	46.5	46.4	.1	18	1.18	1.45	1.45	1.30	8800	11200	.54	.60	26	79

beater bursting strength tests of the heartwood and sapwood pulps from the very young, very rapid-growth type (series C) showed the former to have a slightly higher value at 800-cc freeness, but showed both pulps to have the same value at 550-cc freeness. Thus in all of the cases the heartwood pulps had higher early-developed strengths and higher or equal maximum bursting strengths, as compared to the sapwood pulps.

Tearing Strength

The heartwood pulps from the young, rapid-growth wood pulped at both 148 and 140 deg. C. (series A and B) had higher pebble mill tearing strengths in the unmilled state than the corresponding sapwood pulps, but had lower maximum tearing strengths. The heartwood pulps from the old, slow-growth and very young, very rapid-growth woods (series C) had possibly lower tearing strengths at both freenesses than the corresponding sapwood pulps, although the differences were small. The general trend, then, was toward lower tearing strengths for the heartwood pulps.

Tensile Strength

The trends shown by the tensile strength data confirmed the superiority of the heartwood pulps displayed by the bursting strength data. The heartwood pulp in series A had nearly the same unmilled pebble mill tensile strength as that of the sapwood pulp, but had higher values throughout the milling range. The heartwood pulp in series B had a higher unmilled tensile strength than that of the sapwood pulp, but had much the same maximum tensile strength. The beater tensile strength tests of the pulps in series C showed the heartwood pulp from the old, slow-growth wood to have appreciably higher values at both freenesses than the sapwood pulp and the heartwood pulp from the very young, very rapid-growth wood also to be superior at both freenesses.

Folding Endurance

Folding endurance data are available only for the pulps from the young, rapid-growth wood (series A and B). In both the series the heartwood pulps had higher folding endurance values in the early stages of milling but reached approximately the same maximum.

Conclusions

Chemical analyses of the western hemlock heartwood and sapwood pulped in the experiments reported here showed the heartwood samples to have lower cellulose contents by 1 to 4 per cent, equal or higher lignin, and considerably higher extractives contents than the sapwood, varying with the wood growth type. Sapwood pulp yields were 3.2 and 6.7 per cent higher than the corresponding heartwood pulp yields, depending on the wood growth type. In general, the heartwood pulps had slightly higher bursting and tensile strengths and lower tearing strengths than the corresponding sapwood pulps.

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TAPPI Members To Meet at Jacksonville

Saturday October 15 TAPPI members and friends in the Southeastern States will meet in Jacksonville, Fla., at the Hotel Roosevelt. Plant visits, a technical session and a business meeting are scheduled for that day.

This is the second get-together of technical men from that section interested in the formation of some kind of local organization. The first meeting was held in Savannah last April, at which thirty-one were in attendance. The interest shown at that meeting was such that it was decided to meet again on October 15th. At Jacksonville the continuance of such meetings will be discussed, as well as the advisability of setting up a more permanent organization patterned after the TAPPI local sections.

The one-day program on October 15 is as follows:

9-10 A.M. Registration at Hotel Roosevelt.

10 A.M. Visits to the Glidden Company's neliorosin plant and the National Container Corporation's board mill at Jacksonville.

1 P.M. Lunch at Hotel Roosevelt.

3 P.M. Technical Session—Refining of Kraft Pulp and Rejects; Business meeting to consider organization of pulp and paper technology club.

7 P.M. Dinner—speaker and entertainment.

O. W. A. Rodowsky will preside and lead the discussion at the technical session. Rudolph C. Richter is in charge of all arrangements at Jacksonville. Charles Carpenter is general chairman of the organization meeting.

S. S. Unit Pumps

The Allis-Chalmers Manufacturing Company, Centrifugal Pump Division, Milwaukee, Wis., has issued a new bulletin 1653 on its line of close-coupled centrifugal pumps covering a range of 10 gpm against 10′ head to 1600 gpm 120′ head, and for lower capacities up to 300′ head.

Observations on Experimental Multiple Stage Bleaching*

By John L. Parsons[1] and Donald T. Jackson[1]

Abstract

Experimental data are presented and discussed comparing two and three stage bleaching processes to a single stage bleaching process for sulphite pulp. In the multiple stage procedure the first stage comprises a treatment of the fibers with elementary chlorine. The study is considered from the viewpoint of four types of chemical reactions involved in the bleaching process: (1) the dissolving of the ligneous and other incrusting materials, (2) the removal of the coloring matter in the cellulose, (3) the further chemical interaction with the dissolved materials, and (4) the degradation of the cellulose. The chief objective in the bleaching of pulp is the production of a uniform, standard color with a minimum deleterious effect on the physical and chemical properties of the fibers. Multiple stage bleaching with its attendant removal of oxidizable and undesirable substances from the fibers offers an economy in total available chlorine consumed for a pulp of standard color. This economy in total available chlorine consumed is reflected in enhanced pulp properties.

The chief objective in the bleaching of pulp is the production of fibers of a uniform, standard color with a minimum deleterious effect on their chemical and physical properties. This requires a thorough control of whatever bleaching system is employed to produce the type of bleached pulp desired. Numerous studies on the bleaching of pulp fibers have increased our knowledge of the chemical reactions involved and several methods have been devised for the practical control of bleaching.

Samuelsen*(1)* has pointed out that there are several possible reactions occurring when a bleaching agent is added to a chemical wood pulp. In the bleaching of sulphite pulp from coniferous woods, to which this investigation refers, the following basic reactions are involved:

1. The conversion of ligneous and other incrusting materials associated with the cellulose to a soluble form.
2. The destruction or removal of the coloring matter in the cellulose.
3. The further chemical interaction with the dissolved incrusting materials after their liberation from the cellulose.
4. The destructive attack on the cellulose by the bleaching agent producing fibers having inferior chemical and physical properties.

All four of these reactions proceed simultaneously and at considerably different rates. The preferred conditions for the bleaching of a pulp are those which favor reactions 1 and 2, and which repress, insofar as possible, the undesirable reactions 3 and 4.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 21-24, 1938.

[1] Member TAPPI, Hammermill Paper Co., Erie, Pa.

Bleach Reactions and Testing Methods

In this paper there are reported the results of a study of some of the factors which are involved in the single, two, and three stage experimental bleaching of sulphite pulp. To evaluate the degree to which each of the above listed reactions have occurred under different bleaching conditions it is necessary to measure the effects of the reactions. The methods used for such measurement are shown in Table I.

TABLE I

Reaction	Method of Measurement
1. The removal of the ligneous and other incrusting materials	Determination of the organic and inorganic materials dissolved during various bleaching stages. Evaporation of the liquid and subsequent ignition of the residue gives an indication of the amount removed. The oxidation by potassium permanganate of the readily oxidizable organic materials in the extract also give an indication of the organic matter present.
2. The destruction or removal of coloring matter of the pulp	A measurement of the color of the pulp by determining its reflectance using the General Electric Reflectance Meter equipped with No. 1 filter (principal wave length 445 millimicrons) and a Jena glass filter. "Brightness" value.
3. The further chemical interaction with the dissolved incrusting materials	There is no direct way of measuring this value but the ratio between total organic matter and permanganate demand, as determined for reaction 1, will give an indication of the extent to which this has occurred.
4. The destructive attack on the cellulose	The measurement of the viscosity of the pulp in cuprammonium solution (TAPPI Method T206 m-35) gives an indication of the degrees of attack on the cellulose.

In addition to the above tests the strength properties of the pulps were evaluated by beating them to a uniform slowness (modified Green tester) in an Abbè ball mill and testing hand made sheets (substance 20, 17x22, 500). The bursting strength was determined by the Mullen tester, the double folds by the Schopper instrument, and tearing resistance by the Elemndorf tester. All tests were made on sheets seasoned at a relative humidity of 50 per cent at 70 deg. F.

Since it has been shown that the pH of the bleaching process has a marked influence on the properties of the pulp, the pH of the solutions was determined by means of the Leeds and Northrup glass electrode assembly.

Experimental Data

The amount of dissolved material removed from

TABLE II.—SOLUBLE PRODUCTS REMOVED AT DIFFERENT STAGES IN MULTIPLE STAGE BLEACHING OF SULPHITE PULP

Basis 100 Grams Oven Dry Pulp

Stage	Oxidation: cc. 1N $KMnO_4$ Required	Evaporation and Ignition: Grams Solids	Evaporation and Ignition: Grams Organic Solids	cc. 1 N $KMnO_4$ per Gram Organic Material
Chlorination 2.5 per cent available chlorine, 24 deg. C.	241	3.74	2.86	84
After washing	9	0.36	0.22	42
0.25 per cent sodium hydroxide at 25 deg. C.	27	0.85	0.54	50
End hypochlorite bleach 38-40 deg. C.	32	3.50	1.10	29

the pulp during each stage of a multiple stage bleaching is an indication of the loss in weight suffered by the pulp and its measurement is of importance in comparing the efficiency of different bleaching methods. The results of such a measurement are shown in Table II.

In the above table the data are taken from a two stage bleaching process in which 2.50 per cent available chlorine was used in the chlorination stage and 1.20 percent available chlorine in the form of calcium hypochlorite in the second stage.

The values in the last column are of interest as they show the relative degree of oxidation which the extracted organic matter has already undergone. The smaller this value, the greater is the degree of oxidation.

It is realized that evaporation of the extract would drive off any volatile organic matter present. However, some preliminary experiments showed that this value was small and did not appreciably influence the results.

Usually the amount of available chlorine necessary to bleach a given pulp to a given degree of whiteness decreases as the number of bleaching stages increase. This is shown in Table III wherein the data for bleaching a typical sulphite pulp by different methods are summarized.

TABLE III.—CHLORINE CONSUMPTION BY VARIOUS BLEACHING METHODS

Sample Number	702	704	706
Method of Bleaching	Single Stage Hypochlorite	Two Stage Chlorine, Hypochlorite	Three Stage Chlorine, Sodium Hydroxide, Hypochlorite
Per cent Available chlorine Consumed as:			
1. Elementary chlorine.....	None	2.29	1.76
2. Calcium hypochlorite.....	4.40	0.51	0.31
Total available chlorine consumed	4.40	2.80	2.07
Color	85.6	85.8	85.6

Pulp from first stage of No. 704 after washing was neutralized with 0.5 per cent calcium hydroxide.

Pulp from first stage of No. 706 after washing was treated at 10 per cent pulp consistency with 0.5 per cent sodium hydroxide at 50 deg. C. for 45 minutes and again washed.

Samuelsen*(1)* and others have pointed out the relationship which exists between the acidity of the pulp suspension to which available chlorine has been added and the rate of the chlorine consumption. In general, the rate of chlorine consumption is greatest in the more acid solutions (pH 1-2) and decreases, as the alkalinity is increased, to a minimum around a pH

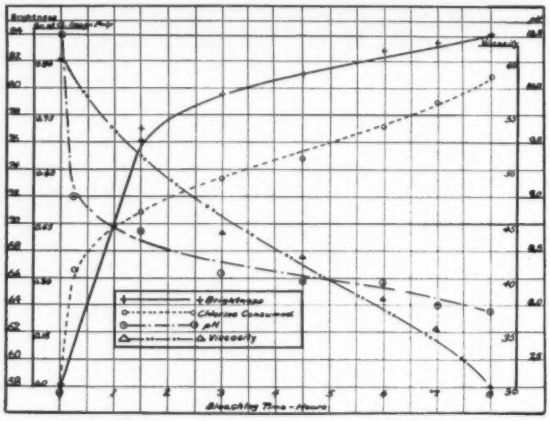

FIG. 1
Second Stage of a Chlorine-Hypochlorite Bleach.

of 11-12. Between pH of 6 and 7 there is an increased chlorine consumption probably due to certain side reactions at this point.

In the vicinity of the neutrality point (pH 7) Clibbens and Ridge *(2)* have found the maximum rate of cellulose degradation, the rate of attack being less under either slightly alkaline or slightly acid conditions. Hisey and Koon *(3)* concluded that at the neutral point a severe chemical attack on the fibers occurred, as indicated by an extremely high sodium hydroxide solubility of the pulp.

The difference in the rate at which the available chlorine is utilized by the pulp under different conditions of acidity or alkalinity is closely connected with the state of the available chlorine. It is generally accepted that alkaline solutions contain practically only hypochlorite ions; solutions of about pH 5 contain largely hypochlorous acid; and strongly acid solutions below a pH of about 3, mainly elementary chlorine.

As the result of a number of investigations on the effect of pH and the oxidizing power of bleaching agents containing available chlorine, it is generally concluded that hypochlorites are most effective as whitening agents under conditions of moderate alkalinity, pH 8-11. Over this range cellulose degrada-

TABLE IV.—PROPERTIES OF PULPS BLEACHED BY DIFFERENT METHODS

Expt. No.	Method of Bleaching	Per cent Consistency	Temp. Deg. C.	Time in Hours	Per Cent Available Chlorine Added	Per Cent Available Chlorine Consumed	Per cent Consumption	Color	Viscosity	Tests at 34 Per Cent Slowness 20-pound Sheet: Revolutions Beaten	Mullen	Folds	Tear
700	Unbleached pulp (Wiles permanganate number 85 = 4.8 per cent available chlorine)..	..	.....	...	...	...	...	60	74	2865	47	1275	49
702	Single stage: Calcium hypochlorite	5.0	37–40	5.5	4.40	4.13	94.0	85.6	21	2380	43	635	44
704	Two stage: Chlorine-hypochlorite												
	First stage Chlorine water	2.8	24	1.0	2.40	2.29	95.4	...	..	....	..	...	..
	Second stage Pulp neutralized with 0.5 per cent calcium hydroxide and treated with calcium hypochlorite.....	5.0	37–39	3.0	0.65	0.51	79.1	...	..	....	..	...	..
	Total			4.0	3.05	2.80	91.8	85.8	43	2740	42	1005	51
706	Three stage: Chlorine-sodium hydroxide-hypochlorite												
	First stage Chlorine water	2.8	26	1.00	1.85	1.76	95.1	...	..	....	..	...	..
	Second stage Hot sodium hydroxide 0.5 per cent.	10.0	50	0.75	...	...	...	...	..	....	..	...	..
	Third stage Calcium hypochlorite	5.0	37–38	2.50	0.35	0.31	88.4	...	..	....	..	...	..
	Total			4.25	2.20	2.07	94.1	85.6	64	2990	43	1185	53

Note: Pulp washed with water at 25 deg C. after each stage. Calculations based on pulp on oven-dry basis (105 deg. C.).

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TABLE V.—PROPERTIES OF PULPS BLEACHED BY DIFFERENT METHODS

Expt. No.	Method of Bleaching	Per cent Consistency	Temp. Deg. C.	Time in Hours	Per Cent Available Chlorine Added	Per Cent Available Chlorine Consumed	Per cent Consumption	Color	Viscosity	Tests at 34 Per Cent Slowness 20-pound Sheet: Revolutions Beaten	Mullen	Folds	Tear
900	Unbleached pulp (Wiles permanganate number 74 = 4.15 per cent available chlorine)	..	.....	...	...	...	...	...	..	3190	44	740	64
901	Single stage: Calcium hypochlorite	5.0	38–40	5.5	4.00	3.77	94.3	84.5	26	2600	40	280	54
902	Two stage: Chlorine-hypochlorite												
	First stage Chlorine water	2.8	24	0.75	1.80	1.71	95.0	...	..	....	..	...	..
	Second stage Added 0.25 per cent sodium hydroxide and calcium hypochlorite. Final pH 7.4	5.0	38–40	2.50	1.20	0.90	75.0	...	..	....	..	...	..
	Total			3.25	3.00	2.61	87.0	85.6	44	2925	48	735	63
909	Two stage: Chlorine-hypochlorite												
	First stage: Chlorine water	2.8	26	0.75	1.70	1.62	95.3	...	..	....	..	...	..
	Second stage: Added 0.49 per cent sodium hydroxide at start. 0.10 per cent alkali added during calcium hypochlorite bleach. pH 9.1-8.5.	5.0	38–40	3.50	1.00	0.77	77.0	...	..	....	..	...	..
	Total			4.25	2.70	2.39	88.5	87.0	61	2985	46	750	67

Note: Pulp washed with water at 25 deg. C. after each stage. Calculations based on pulp on oven-dry basis (105 deg. C.).

tion is lessened. In multiple stage bleaching wherein the first stage chlorine is used, the most advantageous pH appears to be about 2.

The rate at which the color of the pulp increases and the viscosity decreases in relation to rate of chlorine consumption is shown in Fig. 1.

The method of bleaching also affects the physical and chemical properties of the pulp. Usually there is a more or less direct relationship between the amount of available chlorine in the form of hypochlorite used in the bleaching and the properties of the bleached pulp. For any given unbleached pulp the quality of the bleached pulp produced under similar conditions will become inferior as the amount of hypochlorite consumed increases. These relationships for two different sulphite pulps are shown in the Tables IV and V.

Discussion

From the data in Table IV it can be seen that by dividing the bleaching process into stages, washing between each stage, and using smaller quantities of hypochlorite, a superior bleached pulp was obtained as compared to that produced by a single stage hypochlorite process. In general the two stage chlorine-hypochlorite bleaching procedure required about 70 per cent of the available chlorine compared to the single stage method when the pulps were bleached to the same color. The smaller the quantity of hypochlorite used the better is likely to be the quality of the bleached pulp. It should be noted that while the pulps were bleached to the same color (85.6-85.8), the cuprammonium viscosity, folding endurance, tear test and beating requirement properties increase with each stage added to the bleaching process. As these pulp properties are improved the amounts of available chlorine consumed in the form of calcium hypochlorite were decreased from 4.13 to 0.31 per cent, based on the oven-dry weight of the pulp. In the multiple stage processes about 80 per cent of the total available chlorine was used in the form of elementary chlorine in the first stage. As described in the earlier part of this study the chlorination process brings about the solution of a considerable quantity of ligneous and other incrusting materials which are subsequently washed away, thus eliminating to a considerable extent the undesirable consumption of hypochlorite added in later stage. In this manner reaction 3, which relates to the oxidation of incrusting materials in solution, is brought to a minimum.

The essential differences between experiments 704 and 706 consisted in the latter case of a treatment of the pulp with 0.5 per cent sodium hydroxide at 50 deg. C. and 10 per cent pulp consistency, following the chlorination stage. This hot alkali extraction yielded a dark colored liquid containing quantities of oxidizable materials. Compared to the two stage chlorine-hypochlorite process the three stage procedure offers an economy of available chlorine amounting to about 30 per cent. The reduction in the total amount of available chlorine consumed is reflected in the enhanced properties of the bleached pulps. It can be stated, therefore, that multiple stage bleaching has minimized the attack on the cellulose comprising the fiber.

In Table V comparison is made between single stage bleaching, where the pH range is approximately 9 to slightly below 7, and the two stage chlorine-hypochlorite bleaching, where in experiment 902 an insufficient amount of alkali was added to maintain much alkalinity in the hypochlorite stage, the final pH being 7.4, and in experiment 909 the pH range was held at 9.1-8.5 by adding alkali. Single stage bleaching with its increased consumption of available chlorine as calcium hypochlorite gave a pulp of definitely inferior properties compared to double stage bleaching. By controlling the pH of the hypochlorite stage in experiment 909 it was possible to produce a whiter pulp than in either 901 or 902 with less consumption of total available chlorine. A condition of moderate alkalinity (pH 9) seems to favor the whitening of pulp with hypochlorites and tends to minimize the attack on the cellulose.

Summary

In the bleaching of sulphite pulp fibers four types of chemical reactions are considered:

1. The removal of ligneous and other encrusting materials;
2. The destruction of coloring matter;
3. The chemical interaction between the bleaching agent and the dissolved incrusting materials; and . . .

4. The destructive attack on the cellulose.

It is advantageous to conduct the bleaching process as to favor reactions 1 and 2 and to repress reactions 3 and 4. Multiple stage bleaching, wherein the first stage comprises a treatment of the fibers with elementary chlorine, followed by a washing away of the dissolved materials and then a treatment with a hypochlorite, appears to possess desirable features from the viewpoint of the types of reactions under consideration. By using a hot alkali extraction treatment between the chlorination and the hypochlorite stages a further removal of oxidizable substances occurs, which results in an economy of bleaching agent, thus repressing reaction 3. The removal of the coloring matter or the whitening of the fibers in the hypochlorite stage can also be enhanced by maintaining a condition of alkalinity approximating pH 8-11. This also tends to repress degradation of the cellulose.

In general, chemical attack of the cellulose is proportional to the amount of hypochlorite consumed in the bleaching process. Compared to single stage bleaching, multiple stage bleaching, with its attendant removal of oxidizable and undesirable substances from the fiber, offers an economy in total available chlorine consumed for a pulp of standard color. This economy in total available chlorine consumed is reflected in enhanced pulp properties.

Literature Cited

(1) Samuelsen, *Proc. Tech. Sect. Paper Makers' Assoc. G. Brit. & Ireland*, 17, 293-337 (Mar., 1937).
(2) Clibbens and Ridge, *J. Textile Inst.*, 18, T135-167 (1927).
(3) Hisey and Koon, *Tech. Assoc. Papers*, 19, 293-300 (June,1936).

Annual Southern Paper Festival

Definite plans are now under way for the first of the Annual Southern Paper Festivals to be held in Savannah April 17-18-19, 1939. The general purpose of this Festival is:

(1) To stimulate the use of the products of the Pulp and Paper and allied Industries.

(2) To educate the public in the importance of paper products and the manufacturing significance of same to the resources available in the south.

(3) To create a general feeling of optimism and good will through entertainment and recreational features.

With every state in the south participating it is to be representative of pulp paper and allied industries of the south and the consumers of their products. It will be given wide publicity and will undoubtedly attract a great number of people directly or indirectly interested in this industry.

It is planned to offer a varied and attractive program with forest growth and conservation, the development of paper and its many uses as the theme. There will be educational features such as industrial exhibitions showing derivation and use of paper products as well as equipment used in its manufacture; lectures, moving pictures and trade association meetings will provide additional interest.

For entertainment there will be banquets, historical pageants, paper parade with decorated floats, paper ball, coronation of the paper Queen, carnival features, fireworks, golf and sporting events to keep the visitors well occupied.

Invitations to cooperate have been sent to the governors of the southern states, the pulp and paper and allied industries, trade and forest associations as well as consumers.

The general committee of the Southern Paper Festival Association have selected Major D. G. Moon, who is well known in the paper industry as a consulting engineer, to act as managing director, and he will be assisted by Mrs. Moon as co-director.

Both Mr. and Mrs. Moon have been successful in directing several other conventions, the best being the TAPPI-1937 fall meeting held in Savannah with great success.

Mr. Moon was educated in England, is a graduate of Oxford and the City of London Technical Institute and gained his first engineering experience on railroad construction and explorations in Mexico and Central America.

Later in the United States he became interested in the power and industrial field and was responsible for the design and construction of several of the large hydro electric developments and paper mills in Wisconsin and Michigan.

At the outbreak of the war he was Commissioned in the United States Engineer Corps, served two years overseas with the 122nd Engineers participating in engagements in Flanders and on the Vesle, and returned with the rank of major.

After the war he was retained as chief engineer in the development of power plants, pulp, paper and converting mills in the west, Canada, and New England as well as managing manufacturing operations.

Mr. Moon has been in the south since 1935 in connection with the development of the pulp and paper mills in this section and is now in private practice at Savannah as a consulting engineer to these and allied industries.

Mrs. Moon is a native Virginian, was educated at Thurston, Mary Baldwin and Oberlin Conservatory, served during the war as a Y.W.C.A. director, and has been quite active in the business world with real estate and interior decorating, and as a planning and building consultant.

Paper To Replace Jute as Sack Material

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 3, 1938 — After four years of research, Dr. Junji Torii, head chemist of the Japan Bag Company, Tokyo, is said to have perfected a new type of heavy paper for use in the manufacture of sacks, according to a report to the Department of Commerce from the office of the American Commercial Attache at Tokyo.

It has been stated locally that the Japanese army may probably use the invention to replace jute or ramie, the former being imported from India and restricted by trade control for making sandbags.

The new product is said to resist water and sand better than hemp or leather. Moreover, it tends to increase in strength when left in water for prolonged periods, according to the report.

Imports of Paper and Paper Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.

NEW YORK IMPORTS

WEEK ENDING OCTOBER 1, 1938

SUMMARY

Cigarette paper .....10 cs.
Wall paper .....6 bxs., 11 cs.
Newsprint .....8,563 rolls, 122 bls.
Printing paper .....56 cs.
Wrapping paper .....2,472 rolls, 207 bls., 2 cs
Packing paper .....60 bls
Filter paper .....55 cs.
Filter compound .....52 bls.
Filter material .....28 drums, 31 cs., 16 bls.
Drawing paper .....1 cs.
Tracing cloth .....26 cs.
Surface baryta coated paper .....3 cs.
Surface coated paper.....10 cs.
Photo paper .....9 cs.
Decalcomania paper .....9 cs., 13 drums
Tissue paper .....16 cs.
Gummed paper .....1 cs.
Parchment paper .....8 cs.
Paper tubes .....110 pkgs., 17 rolls, 36 bls., 22 cs.

CIGARETTE PAPER

Gluckman & Strauch, *Exeter,* Marseilles, 10 cs.

WALL PAPER

S. K. Lonegren, *Gripsholm,* Gothenburg, 6 bxs.
F. Blank & Co., Manhattan, Havre, 11 cs.

NEWSPRINT

N. Y. Evening Journal, *Ary Lenson,* Quebec, 577 rolls.
Daily Mirror, *Ary Lenson,* Quebec, 2573 rolls.
N. Y. Evening Journal, *Pr. Harding,* Finland, 258 rolls.
Jay Madden Corp., *Pr. Harding,* Finland, 364 rolls.
N. Y. Evening Journal, *Markland,* Liverpool, N. S., 784 rolls.
N. Y. Tribune, Inc., *Markland,* Liverpool, N. S., 1844 rolls.
World Telegram, *Markland,* Liverpool, N. S., 591 rolls.
Brooklyn Daily Eagle, *Markland,* Liverpool, N. S., 651 rolls.
Herald Statesman, Inc., *Markland,* Liverpool, N. S., 42 rolls.
South Norwalk Sentinel, *Markland,* Liverpool, N. S., 66 rolls.
———, *Stavangerfjord,* Oslo, 122 bls., 18 rolls.
———, *Stavangerfjord,* Skien, 32 rolls.
Perkins Goodwin & Co., *Deutschland,* Hamburg, 306 rolls.
Jay Madden Corp., *Deutschland,* Finland, 200 rolls.
N. Y. Evening Journal, *Manhattan,* Hamburg, 257 rolls.

PRINTING PAPER

L. A. Consmiller, *Bremen,* Bremen, 50 cs.
———, *Westernland,* Antwerp, 6 cs.

WRAPPING PAPER

Yardley & Co., *Britannic,* London, 2 cs.
Jay Madden Corp., *Pr. Harding,* Finland, 2148 rolls, 207 bls.
Gilson Bros., *Gripsholm,* Gothenburg, 228 rolls.
Jay Madden Corp., *Manhattan,* Finland, 96 rolls.

PACKING PAPER

J. P. Heffernan Paper Co., *Exeter,* Genoa, 60 bls.

FILTER PAPER

H. Reeve Angel & Co., Inc., *American Banker,* London, 36 cs.
———, *Deutschland,* Hamburg, 19 cs.

FILTER COMPOUND

Geo. Segal Co., *St. Louis,* Hamburg, 30 bls.
A. Giese & Son, *St. Louis,* Hamburg, 22 bls.

FILTER MATERIAL

———, *Deutschland,* Hamburg, 28 drums, 31 cs., 16 bls.

DRAWING PAPER

Favor Ruhl & Co., *Manhattan,* Havre, 1 cs.

TRACING CLOTH

E. Dietzgen & Co., *American Importer,* Manchester, 9 cs.
Keuffel & Esser Co., *American Importer,* Manchester, 17 cs.

SURFACE BARYTA COATED PAPER

———, *Westernland,* Antwerp, 3 cs.

SURFACE COATED PAPER

Hensel Beuckman & Lorbacher, *Deutschland,* Hamburg, 10 cs.

PHOTO PAPER

J. J. Gavin & Co., Inc., *Britannic,* London, 9 cs., (unsensitized).

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *American Importer,* Liverpool, 9 cs., 13 drums, (duplex).

TISSUE PAPER

B. F. Drakenfeld & Co., *American Importer,* Liverpool, 2 cs.
Dingelstedt & Co., *American Importer,* Liverpool, 1 cs.
Tricolator Co., *Yamazuki Maru,* Yokohama, 13 cs.

GUMMED PAPER

W. A. Foster & Co., *American Importer,* Liverpool, 1 cs.

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E. Dietzgen & Co., *Deutschland,* Hamburg, 8 cs., (imitation

PAPER TUBES

———, *Deutschland,* Hamburg, 36 bls., 17 rolls, 110 pkgs
American Express Co., *Champlain,* Havre, 1 cs.
S. H. Pomerance & Co., *Champlain,* Havre, 1 cs.
Corn Exchange Bank Trust Co., *Yamazuki Maru,* Yokohama, 20 cs.

RAGS, BAGGINGS, ETC.

Banco Coml Italiane Trust Co., *Monbaldo,* Genoa, 60 bls. bagging.
National City Bank, *Britannic,* London, 92 bls. rags.
W. Steck & Co., *Robert Maersk,* London, 72 bls. waste strings.
Whaling Waste Products Co., Inc., *Robert Maersk,* Antwerp, 192 bls. jute waste.
Castle & Overton, Inc., *Capulin,* Dundee, 114 bls. paper stock.
Chase National Bank, *Capulin,* Dundee, 306 bls. paper stock.
Banco Coml Italiane Trust Co., *Capulin,* Dundee, 390 bls. paper stock.
———, *Capulin,* Dundee, 97 bls. paper stock.
———, *Westernland,* Antwerp, 581 bls. cotton waste yarn.
———, *American Importer,* Manchester, 241 bls. paper stock.
———, *Kyno,* Newcastle, 98 bls. waste string.
Royal Manfg Co., *Yamazuki Maru,* Yokohama, 70 bls. rags.
Chase National Bank, *Yamazuki Maru,* Yokohama, 20 bls. rags.
Darmstadt Scott & Courtney, *Black Eagle,* Rotterdam, 122 bls. bagging.
F. J. Fawcett, *Black Eagle,* Antwerp, 86 bls. flax waste.
Hughes Fawcett, Inc., *Black Eagle,* Antwerp, 14 bls. flax-waste.
E. J. Keller Co., Inc., *Black Eagle,* ———, 94 bls. bagging.
Castle & Overton, Inc., *Tokai Maru,* Hamburg, 189 bls. bagging.
Irving Trust Co., *Tuscania,* Glasgow, 57 pkgs. paper stock.
R. Blank, *Exeter,* Alexandria, 239 bls. old cottons.
W. Steck & Co., *Exeter,* Alexandria, 96 bls. bagging.
W. J. Green & Co., *Exeter,* Alexandria, 69 bls. rags.
Castle & Overton, Inc., *Exeter,* Alexandria, 168 bls. rags.
Banco Coml Italiane Trust Co., *Exeter,* Alexandria, 142 bls. bagging.
Chase National Bank, *Exeter,* Alexandria, 83 bls. old cottons.
Darmstadt Scott & Courtney, *Exeter,* Alexandria, 82 bls. rags, 79 bls. bagging.
Irving Trust Co., *Exeter,* Alexandria, 66 bls. bagging.
E. J. Keller Co., Inc., *Exeter,* ———, 78 bls. bagging, 84 bls. rags.
———, *Excello,* Leghorn, 780 bls. rags.

HIDE CUTTINGS

———, *American Importer,* Liverpool, 270 bags.

OLD ROPE

Banco Coml Italiane Trust Co., *Robert Maersk,* London, 150 bls.
W. Steck & Co., *N. Amsterdam,* Rotterdam, 102 bls.
———, *Kyno,* Hull, 72 coils,
E. J. Keller Co., Inc., *Edam,* ———, 90 coils.

CASEIN

———, *Champlain,* Havre, 200 bags.
———, *Northern Prince,* B. Ayres, 84 bags.

WOOD PULP

———, *Black Eagle,* Rotterdam, 140 bls. wood pulp, 27 tons.
Absorbo Beer Pad Co., *St. Louis,* Hamburg, 150 bls. wood pulp, 16 tons.
E. M. Sergeant Pulp & Chemical Co., *Stavangerfjord.* Nygard, 125 bls. chemical pulp.

WOOD PULP BOARDS

Fibre Case & Novelty Co., *Gripsholm,* Gothenburg, 24 bls.
———, *Deutschland,* Hamburg, 55 bls. (sheets).

ALBANY IMPORTS

WEEK ENDING OCTOBER 1, 1938

International Paper Co., *Bjerka,* Chatham, N. B., 1324 cords pulpwood.

PORTLAND IMPORTS

WEEK ENDING OCTOBER 1, 1938

Gottesman & Co., Inc., *Hammaren,* Sweden, 1800 bls. wood pulp.
Pagel Horton & Co., Inc., *Hammaren,* Sweden, 4751 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING OCTOBER 1, 1938

New England Newspaper Publishing Co., *Ary Lensen,* Quebec, 132 rolls newsprint.
Boston Record, *Ary, Lensen,* Quebec, 1228 rolls newsprint.
Boston Advertiser, *Ary Lensen,* Quebec, 472 rolls newsprint.
Price & Pierce, Ltd., *Tunaholm,* ———, 360 bls. bleached sulphite.
E. J. Keller Co., Inc., *Exeter,* ———, 92 bls. paper stock.
Gottesman & Co., Inc., *Hammaren,* Sweden, 2810 bls. wood pulp.
Pagel Horton & Co., Inc., *Hammaren,* Sweden, 306 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING OCTOBER 1, 1938

———, *Capulin,* Leith, 110 bls. bagging.
J. Wallworth & Sons, *Capulin,* Dundee, 25 bls. paper stock.
Castle & Overton, Inc., *Black Eagle,* Rotterdam, 104 bls. rags.
E. J. Keller Co., Inc., *Black Eagle,* ———, 151 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING OCTOBER 1, 1938

S. Shapiro & Sons, Inc., *Norden,* Kobe, 120 bls. rags.

NORFOLK IMPORTS

WEEK ENDING OCTOBER 1, 1938

Castle & Overton, Inc., *Capulin,* Hamburg, 1250 bls. wood pulp.
———, *Capulin,* Hamburg, 31 rolls newsprint.
———, *Capulin,* Dundee, 51 bls. bagging.

NEW ORLEANS IMPORTS

WEEK ENDING OCTOBER 1, 1938

E. J. Keller Co., Inc., *Indiana,* ———, 338 bls. paper stock.
E. J. Keller Co., Inc., *Arica,* ———, 58 bls. paper stock.

MONTREAL IMPORTS

WEEK ENDING OCTOBER 1, 1938

Price & Pierce, Ltd., *Topdalsfjord,* ———, 15000 bls. unbleached sulphate.
Pagel Horton & Co., Inc., *Topdalsfjord,* Sweden, 15120 bls. wood pulp.
Gottesman & Co., Inc., *Sturcholm,* Sweden, 3000 bls. wood pulp.

Japan Restricts Use of Paper

WASHINGTON, D. C., September 28, 1938—Late in July it was announced that the Department of Commerce and Industry of Japan had requested publishers of newspapers, magazines, and the like to effect definite curtailments in their use of paper. Beginning September 1 newspaper publishers reduced the amount of paper used by 12 per cent from the average amount consumed during the year which ended June 30, 1937. Magazine publishers will be asked to use 20 per cent less paper, while all other publishers will be forced to get along with 30 per cent less paper. The "request" is so worded, apparently, that no choice is left to the publisher. No dates have yet been announced as to when restricted consumption goes into force for magazine and other publishers.

Production and sales of paper by the Japan Paper Manufacturers' Association during the second quarter of 1938 showed gains over the preceding quarter. As regards foreign trade, imports dropped to excessively low levels due to current trade and exchange restrictions. Exports on the other hand, gained sharply over the preceding quarter, and were less than 1 per cent short of exceeding the all-time high quarterly total of the second quarter of 1937.

New Combustion Control Bulletin

A 32-page bulletin "Bailey Meter Control" describing the application of the Bailey Steam Flow-Air Flow Automatic Readjustment Type of Air-Operated Combustion Control has just been published by Bailey Meter Company, Cleveland, Ohio.

In addition to describing and illustrating the various elements of the control system, the bulletin explains fundamental principles involved in controls, both for boilers fired with stokers and for boilers fired with fuels in suspension. Several actual installations are shown diagrammatically and illustrated with installation photos.

A large saving in fuel economy is claimed for this system which automatically maintains the desired fuel-air ratio at all times without the necessity of periodic attention and manual readjustment by boiler operators.

Other advantages claimed for Combustion Control are: increased safety of operation made possible by removal of the human element and the use of interlocks. Reduced boiler and furnace maintenance which results from the control's continuous action tending to hold operating conditions and factors at the values for which the steam generating unit was designed.

French Pulp Industry Expands

There were only 11 chemical pulp mills and 17 mechanical pulp mills in France prior to the World War, producing a total of 155,000 metric tons of pulp. The industry was disrupted during the war and in 1920 production had fallen to 40,000 tons of chemical pulp and 40,000 tons of mechanical pulp. Between 1922 and 1930 300,000,000 francs were invested in the industry, and by 1931 the output of chemical pulp had risen to 90,000 tons and mechanical pulp to 70,000 tons annually. Capacity of these mills, however, was reported to be 150,000 to 160,000 tons for chemical pulp and 200,000 to 220,000 tons for mechanical pulp.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, October 5, 1938

The wholesale paper market has been hampered by the strike of truck drivers, hurricane and floods and the reaction of the stock market to lower levels because of the European war crisis. Due to these adverse factors the volume of sales in September was disappointing. Volume for last month was therefore smaller than it undoubtedly would have been under normal conditions. Sales in August were quite generally reported as the best for any month of the year and a substantial improvement in demand is expected during this month.

The index of general business activity for the week is fractionally lower than for last week. Production of over two hundred paper mills for the week ended September 24 was nearly 80 per cent, compared with 81.9 per cent for the corresponding week last year.

The demand for newsprint is reported as little changed. The outlook, however, is much improved and a pick up in demand is looked for by the trade this month. Prices continue firm and unchanged.

The demand for some grades of sulphite paper is a little improved for the current week. The sales volume of writing papers is little changed but optimism prevails in this division of the industry and a substantial improvement is expected during the current month. Production of tissue papers continues at a high level and distribution is also reported as good. The demand for kraft paper continues active and production continues at a high level. Present representative quoted market prices are too low in the opinion expressed in some quarters, but as the bulk of sales has been made on the basis of the present price level for some months, no change in current quotations are expected in the immediate future.

Mechanical Pulp

All grades of domestic, Canadian, and European pulps are reported as in light demand. Prices remain firm and no change from prevailing market quotations is reported this week.

Chemical Pulp

The demand for chemical pulp is reported as unchanged for the week and continues light. More inquiries have been received in some quarters of the trade and an improvement in volume is expected to set in later in the month. Prices are firm and unchanged.

Old Rope and Bagging

The demand for old rope continues light. Prices hold firm and are unchanged at prevailing quotations, with the exception of foreign manila, which is higher for the current week and quoted at $2.90 to $3. Bagging continues quite active. Prices remain firm and unchanged at prevailing quotations.

Rags

The demand for most grades of new and old paper making rags is reported as light. Roofing rags are reported in good demand and prices firm. No change in rag prices is reported this week, with the exception of No. 2 roofing rags which are five cents a pound higher this week and currently quoted at from .85 to .90 cents per cwt. The foreign rag market is inactive and nominal prices prevail.

Waste Paper

A little improvement is reported in some quarters of the waste paper trade, but the market as a whole is weak, prices are soft and demand as light. Prices remain unchanged with the exception of quotations on strictly folded news, which are a little lower this week.

Twine

The demand for twine is reported as little changed. Improvement is expected during the month. Prices are firm and no changes are reported for the current week.

Brighter Outlook for Paper in England

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 28, 1938—Reports from the paper-making industry of England indicate a somewhat brighter outlook with regard to future trade in paper. It is said that although demand still leaves a good deal to be desired, it has "firming up" in the market for paper. As regards prices, no material change has occurred. Heavy stocks, the presence of which was largely a contributing cause of the recent slump in demand, apparently have been liquidated to a considerable extent. This has been an important factor toward accounting for the more healthy tons in the market during July.

Newsprint shipments from the United Kingdom in the last 6 months showed a decline of 5,390 cwts. compared with the same period of a year ago. Australia was an important outlet for British newsprint, but Canada is stated to be supplying large quantities for that market. It is now reported, moreover, that a scheme for establishing newsprint mills in Tasmania with a capital of 4,000,000 Pounds Sterling ($20,000,000 United States currency) has been put forward. If carried through, this will inevitably have an adverse effect on British exports of newsprint.

The high price of pulp is still affecting costs of production, but it is expected that the state of the raw material market will gradually improve.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, October 5, 1938.

BLANC FIXE—The prices of blanc fixe continue firm and conform to prevailing market quotations. The pulp is quoted at from $42.50 to $45 per ton, in bulk; the powder is quoted at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—Quotations on bleaching powder continue firm and unchanged at prevailing market prices. Bleaching powder is quoted at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The demand for casein is reported as only fair for the current week. Prices are slightly lower. Domestic ground, 20-30 mesh, casein is quoted at from 9 to 9½ cents per pound; domestic finely ground, 80-100 mesh, at 10 cents per pound; all prices in bags, car lot quantities.

CAUSTIC SODA—Quotations on caustic soda continue firm and conform to prevailing market levels. Solid caustic soda is quoted at from $2.10 to $2.30 per 100 pounds; flake and ground at from $2.50 to $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—The prices of china clay are reported as firm and unchanged at prevailing quotations. Domestic filler clay is quoted at from $6.50 to $12 per ton; coating clay at from $11 to $22 per ton, at mines. Imported clay is quoted at from $14.50 to $25 per ton, ship side.

CHLORINE—Quotations on chlorine continue firm and conform to prevailing market prices. Chlorine is quoted at $2.15 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The demand for rosin is reported as good for the week. Prices are higher. "G" gum rosin is quoted at $4.55; "FF" wood rosin at $4.55 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent gum rosin size is quoted at $2.62 per 100 pounds, f.o.b., shipping point.

SALT CAKE—Prices of salt cake continue firm and are unchanged at prevailing market quotations. Quotations range at from $12 to $13.50 per ton; chrome salt cake at from $11 to $12 per ton, f.o.b., shipping point. Imported saltcake is quoted at from $14.50 to $15 per ton, Gulf or Atlantic Seaboard, on dock.

SODA ASH—Quotations on soda ash are firm and conform to prevailing market prices. Quotations on soda ash in car lots, at works, per 100 pounds, are as follows: in bulk, $.90; in bags, $1.05; and in barrels, $1.35.

STARCH—The corn starch market reports demand as good and prices relatively firm. Globe pearl is quoted at $2.50 per 100 pounds, in bags, and at $2.75 in barrels. Special paper starch is quoted at $2.60 per 100 pounds, in bags, and at $2.85 in barrels. All prices in car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Prices of sulphate of alumina continue firm and unchanged at prevailing market quotations. The commercial grades are quoted at $1.15 per 100 pounds; iron free at $1.30 per 100 pounds, in barrels, car lot quantities, f.o.b., works.

SULPHUR—Quotations on sulphur continue firm and conform to prevaling market prices. Annual contracts are quoted at $18 per long ton, f.o.b. cars at mines. Spot and nearby car lots are quoted at $21 per ton.

TALC—The prices of talc continue firm and unchanged at prevailing market levels. Domestic talc is quoted at from $15 to $18 per ton, Eastern mines. Imported talc is quoted at from $25 to $40 per ton, on dock.

Market Quotations

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	@	—
Kraft—per cwt.—Delivered Zone A			
No. 1 Northern	$4.75	@	$5.25
Superstandard	4.12½	@	4.62½
Northern Standard Wrapping	4.00	@	—
Standard Wrapping	3.50	@	—
Tissues—Per Ream—Carlots			
White No. 1	.92½	@	—
White No. 1 M. G.	.90	@	—
White No. 1½	.67½	@	—
White No. 2	.60	@	—
Anti-Tarnish M. G.	.75	@	—
Colored	.87½	@	—
Kraft	.75	@	—
Manila	.60	@	—
Unbl. Toilet, 1 M.	3.20	@	—
Bleached Toilet	5.26	@	—
Paper Towels—			
Unbleached	1.80	@	—
Bleached	2.10	@	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	$8.25	@	$9.75
No. 2 Jute	7.50	@	9.00
No. 1 Manila Wrapping, 35 lb.	5.00	@	—
No. 2 Manila Wrapping, 35 lb.	4.75	@	—
Boards, per ton—			
News	$27.50	@	$30.00
Chip	27.50	@	30.00
Sgl. Mla. Lt. Chip.	42.50	@	—
Jute Lined Chip	42.50	@	45.00
White Pat. Coated.	55.00	@	57.50
Kraft Liners	42.50	@	50.00
Binders Boards	71.00	@	77.00

The following are representative of distributors' resale prices:—

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1.	$39.10@$46.00	$40.25@$47.25
100% Rag	31.05@ 36.50	32.20@ 37.75
85% Rag		29.90@ 35.00
75% Rag	23.60@ 27.75	24.75@ 29.00
65% Rag		21.65@ 26.25
50% Rag	17.55@ 21.50	18.70@ 22.75
25% Rag	14.65@ 17.75	15.80@ 19.25

Colors at $1.00 cwt. extra

Sulphite Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$8.80@$10.75	$9.95@$12.00
No. 2	7.90@ 9.50	9.05@ 11.00
No. 4	7.00@ 8.50	8.20@ 10.00

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$10.80	@	$12.25
No. 2 Glossy Coated	9.25	@	10.50
No. 3 Glossy Coated	8.15	@	9.25
No. 4 Glossy Coated	7.65	@	8.75
No. 1 Antique (watermarked)	7.65	@	8.75
No. 2 Offset	7.00	@	8.00
A Grade E. F.	6.80	@	7.75
A Grade S. & S. C.	7.05	@	8.00
B Grade E. F.	6.25	@	7.25
B Grade S. & S. C.	6.50	@	7.50
C Grade E. F.	6.00	@	7.00
C Grade S. & S. C.	6.25	@	7.25
D Grade E. F.	5.70	@	6.75
D Grade S. & S. C.	5.95	@	7.00

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	25.00	@	28.00
Dry	25.00	@	28.00
(Delivered)			
No. 1 Domestic and Canadian	27.00	@	30.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	2.40	@	2.75
Prime Qualities—			
Easy-Bleaching Sulphite	1.95	@	2.10
Strong Unbleached Sulphite	1.85	@	2.00
(On Dock, Atlantic Ports)			
Kraft Bleached	2.75	@	3.00
Kraft Light & Strong	1.90	@	2.00
Kraft No. 1	1.75	@	1.90
Kraft No. 2	1.50	@	1.65
(F.o.b. Pulp Mill)			
Kraft Domestic	1.50	@	1.90
(Delivered)			
Soda Bleached	2.55	@	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1.	6.75	@	7.00
Silesias No. 1	4.00	@	4.25
New Unbleached	6.75	@	7.00
Blue Overall	5.50	@	5.75
Fancy	2.10	@	2.25
Washables	1.60	@	1.70
Mixed Khaki Cuttings	3.25	@	3.75
O. D. Khaki Cuttings	4.00	@	4.25

Old Rags

White, No. 1—			
Repacked	3.15	@	3.40
Miscellaneous	2.60	@	2.75
White, No. 2—			
Repacked	1.90	@	2.10
Miscellaneous	1.50	@	1.60
Thirds and Blues—			
Repacked	1.40	@	1.80
Miscellaneous	1.25	@	1.30
Roofing Rags—			
No. 1	1.00	@	1.10
No. 2	.85	@	.90
No. 3 (bagging)	.85	@	.90
No. 4	.65	@	.70
No. 5A	.65	@	.70

Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	@	2.20
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.50
New Light Oxford	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.50
No. 2 White Linens	6.50	@	7.50
No. 3 White Linens	4.50	@	—

FINEST CLAYS

IMPORTED

PAPER MAKERS IMPORTING CO. INC. EASTON, PENNSYLVANIA, U.S.A.

DOMESTIC

DOMESTIC—TALC AND WHITING

APPLETON PULP MILL EQUIPMENT

Appleton equipment for the pulp mill is rugged and dependable, with many important improvements which contribute to speed and efficiency in operation and to ease of maintenance.

Splitters · Barkers · Chippers
Deckers · Wet Machines · Pumps
Pulp Washers · Pulp Thickeners
Cylinder Moulds · Flat Screens
Valves · Agitators · Etc. Etc.

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PRICE & PIERCE, Ltd.,

60 EAST 42nd ST.
NEW YORK

Let us take care of your REJECTIONS, over-runs or seconds.

We have branches in fourteen different cities and can sell your rejections for you at a minimum expense to you; wherever they occur.

THE SABIN ROBBINS PAPER COMPANY
STATION A CINCINNATI, OHIO

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	@	4.75
No. 2 White Cotton.	3.25	@	3.75
No. 3 White Cotton.	2.50	@	3.00
No. 4 White Cotton.	1.90	@	2.20
Extra Light Prints..	2.00	@	2.40
Ord. Light Prints...	1.75	@	2.15
Med. Light Prints...	1.55	@	1.95
Dutch Blue Cottons..	2.25	@	2.50
French Blue Linens..	3.00	@	—
Checks and Blues...	2.00	@	—
Linsey Garments....	1.90	@	2.00
Dark Cottons.....	1.50	@	1.60
Old Shopperies.....	1.30	@	1.45
New Shopperies.....	1.45	@	1.50
French Blues.....	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.40	@	2.50
Domestic	2.25	@	2.35
Wool Tares, light...	1.80	@	1.90
Wool Tares, heavy...	1.90	@	2.00
Bright Bagging.....	1.70	@	1.80
Manila Rope—			
Foreign	2.90	@	3.00
Domestic	2.50	@	2.75
Jute Threads.....	2.75	@	3.00
Sisal Strings.....	1.50	@	1.60
Mixed Strings.....	.60	@	.70

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.65	@	2.70
Ordinary Hard White No. 1....	1.90	@	2.00
Soft White No. 1..	1.75	@	1.80
Soft White Extra..	2.25	@	2.40
Flat Stock—			
Stitchless	.80	@	.85
Overissue Mag.....	.70	@	.75
Solid Flat Book...	.60	@	.65
Crumbled No. 1....	.40	@	.45
Ledger Stock White.	1.15	@	1.25
Ledger Stock Colored	.95	@	1.00
New B. B. Chips....	.15	@	.20
Manila—			
New Env. Cut.....	1.40	@	1.50
New Cuttings.....	1.25	@	1.35
Old Kraft Machine—			
Compressed bales..	.75	@	.80
News—			
No. 1 White News	1.35	@	1.40
Strictly Overissue.	.50	@	.55
Strictly Folded....	.27½	@	.32½
No. 1 Mixed Paper..	.17½	@	.20

Twines

(F. o. b. Mill)
(Soft Fiber)

Coarse Polished—			
India	.11	@	.13
White Hemp.....	.12	@	.14
Fine Polished—			
Fine India.....	.15	@	.17
Unpolished—			
Box	.08½	@	—
Paper Makers.....	.07½	@	.08½
Tube Rope.....	.09	@	.10
Wall Paper.....	.10	@	.11
Wrapping	.11	@	.13
Soft Fiber Rope...	.09½	@	.11½
Cotton	.15	@	.20
(Hard Fiber)			
Medium Java.....	.09	@	.10
Mex. Sisal.....	.08½	@	.09½
Manila	.18	@	.25

Domestic	2.65	@	2.75
Sisal Rope.....	1.65	@	1.85
Mixed Rope.....	.50	@	.75
Transmission Rope...	1.90	@	2.00
Soft Jute Ropes.....	1.85	@	2.00
Jute Carpet Threads..	.75	@	.90
Gunny Bagging—			
Foreign	2.37½	@	2.40
Domestic	2.00	@	—
Bleachery Burlap....	3.25	@	3.62½
Scrap Burlap—			
Foreign	1.65	@	1.85
Domestic	1.40	@	1.55
Scrap Sisal	1.25	@	1.50
Scrap Sisal for Shredding	1.75	@	1.90
Wool Tares, Heavy..	1.65	@	1.85
New Burlap Cuttings	2.00	@	2.25
Aust. Wool Pouches.	2.75	@	3.10
Heavy baling bagging	2.00	@	—
Paper Mill Bagging..	1.00	@	1.15
No. 2 Bagging.....	.60	@	.70

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints...	.03¼	@	.03½
New White No. 1...	.06¾	@	.07
New Light Flannelettes	.04¼	@	.04¾
Silesias No. 1.....	.04¼	@	.04½
New Black Silesias..	.03¾	@	.04
Silesias No. 1			
Soft Unbleached.....	.06¼	@	.06¾
Blue Cheviots.....	.05	@	.05¼
Fancy	.03	@	.03¼
Washable	.02¾	@	.03
Cottons—According to grades—			
Blue Overalls.....	.04¾	@	.05
New Black, soft...	.03¾	@	.04
Khaki Cuttings....	.03¼	@	.03¾
D. D. Khaki.....	.04	@	.04½
Corduroy	.02¾	@	.03
New Canvas.....	.06¾	@	.07¼
B.V.D. Cuttings.....	—	@	.06½

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues.....	1.75	@	2.00
Old Blue Overalls...	1.50	@	—
Third and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings.....	3.90	@	4.00
Roofing Stock—			
No. 1.....	1.00	@	1.10
No. 2.....	.75	@	.85
No. 3.....	.65	@	.70

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.05	@	1.15
Dutch Blues.....	2.65	@	2.75
New Checks and Blues	2.85	@	1.00
Old Fustians.....	2.25	@	2.50
Old Linsey Garments	2.20	@	2.25
New Silesias.....	6.00	@	6.50

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1.	.06	@	.06¼
New White, No. 2.	.03½	@	.04
Light Silesias.....	.03½	@	.04
Silesias, No. 1....	—	@	.04½
Black Silesias, soft.	—	@	.03
New Unbleached..	.05½	@	.06
Washable, No. 1..	.01½	@	.01¾
Blue Overall.....	.04	@	.04½
Cottons—According to grades—			
Washable No. 2...	.01	@	.01¼
New Blue.....	.01	@	.01¼
Fancy Percales....	—	@	.02½
New Black Soft...	.03	@	.03½
New Light Seconds	—	@	.04½
New Dark Seconds	.50	@	.75
Khaki Cuttings—			
No. 1 O. D.....	.03	@	.03½
No. 2 Mixed.....	.02	@	.02½
Corduroy	—	@	.02
New Canvas.....	.05	@	.05½
New Black Mixed.	.02½	@	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.25
Miscellaneous	2.50	@	2.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.25
Repacked	1.50	@	1.75
Black Stockings (Export)	3.00	@	3.50
Roofing Stock—			
Foreign No. 1....	—	@	.95
Domestic No. 1...	—	@	.95
Domestic No. 2...	—	@	.85
Roofing Bagging..	—	@	.60

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.50	@	1.75
Manila Rope.....	2.75	@	3.00
Sisal Rope.....	1.50	@	1.75
Mixed Rope.....	.75	@	1.00
Scrap—			
No. 1.....	—	@	1.50
No. 2.....	1.00	@	1.25
Wool Tares, heavy..	3.25	@	3.50
Mixed Strings.....	.75	@	1.00
No. 1 New Light Burlap	2.50	@	3.00
New Burlap Cuttings	1.75	@	2.00

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White.	2.25	@	2.30
No. 2 Hard White.	1.90	@	2.00
No. 1 Soft White..	1.75	@	1.80
No. 2 Soft White..	1.30	@	1.40
No. 1 Mixed.....	.65	@	.75
Solid Ledger Stock..	1.45	@	1.50
Ledger Stock, white.	1.15	@	1.20
Ledger Stock, colored	.75	@	.80
No. 1 Books, heavy..	.60	@	.75
Manila Cuttings.....	1.45	@	1.50
Print Manila.....	.40	@	.45
Container Manila....	.35	@	.40
Kraft Paper.....	.75	@	.80
No. 1 Mixed Paper..	.20	@	.25
Straw Board Chip...	.25	@	.30
Binders Board Chip.	.25	@	.30
Corrugated Board...	.50	@	.55
Overissue News.....	.40	@	.45
Old Newspapers.....	.35	@	.40

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.25	@	2.50
No. 1 Soft White..	1.85	@	2.15
No. 2 Mixed.....	.75	@	.80
Solid Ledger Books..	1.50	@	1.75
Overissue Ledger Stock	1.30	@	1.50
Mixed Ledgers.....	.85	@	.90
No. 1 Books, heavy..	.65	@	.75
No. 1 Books, light...	.65	@	.75
Crumpled Stitchless Book Stock.....	.55	@	.65
Manila Env. Cuttings	1.85	@	2.00
Manila Envelope Cuttings, extra quality.	2.00	@	2.10
No. 1 Old Manila...	.95	@	1.00
White Blank News..	1.30	@	1.40
No. 1 Kraft.....	.90	@	1.00
Mixed Papers.....	.15	@	—
Print Manila.....	.45	@	.55
Container Manilas...	.27½	@	—
Old Newspapers.....	.25	@	.32½
Paper Wool Strings..	.80	@	—
Overissue News.....	.45	@	.50
Box Board Chips....	.20	@	.25
Corrugated Boxes....	.30	@	.35
Kraft corrugated boxes	.65	@	.70
Screening Wrappers..	.40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.80	@	3.00

CHICAGO

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings....	1.80	@	1.90
No. 1 Hard White.	1.70	@	1.80
No. 1 Soft White..	1.50	@	—
Ledger & Writings..	.75	@	.80
Solid Books.....	.55	@	—
Blanks	.90	@	—
Krafts	.60	@	—
New Kraft Cuts.....	1.10	@	—
Manila Env. Cuts...	Nominal		
Ex. No. 1 Manila...	Nominal		
Print Manila.....	Nominal		
Overissue News.....	.35	@	—
Old Newspapers—			
No. 1 Folded News	.30	@	—
No. 1 Mixed Paper	.20	@	—
Roofing Stocks—			
No. 1.....	2.00	@	2.50
No. 2.....	1.85	@	2.00

TORONTO

Paper

Bonds and Ledgers

Delivered

No. 1 White	.36½	@	—
No. 1 Tints	.37½	@	—
No. 2 White	.26½	@	—
No. 2 Tints	.27½	@	—
No. 4 White	—	@	.1550
No. 4 Tints 16.50		@	—
No. 5 Bond—White 11.85		@	—
No. 5 Bond—Tints .12.85		@	—
No. 5 Bond—Golden Rod 13.35		@	—
No. 5 Ledger—White .1185		@	—
No. 5 Ledger—Tints. .1285		@	—
No. 6 Bond—White .10.75		@	—
No. 6 Bond—Tints .11.25		@	—
No. 6 Bond—Golden Rod 12.75		@	—
No. 7 Bond—White . 9.10		@	—
No. 7 Bond—Tints . 9.60		@	—
No. 7 Bond—Golden Rod 11.10		@	—
Book—			
No. 1 M. F. 7.35		@	—
No. 2 M. F. 6.85		@	—
No. 3 M. F. 5.60		@	—
No. 1 S. C. 7.60		@	—
No. 2 S. C. 7.10		@	—
No. 3 S. C. 6.10		@	6.35
No. 1 Coated Book and Litho 12.50		@	—
No. 2 Coated Book and Litho 11.00		@	—
No. 3 Coated Book and Litho 10.00		@	—
Coated tinted.....13.50		@	—
Wrapping—delivered—			
Rag Brown.....	4.85	@	5.55
White Wrap.....	4.00	@	—
"B" Manila.....	4.90	@	6.25
No. 1 Manila.....	5.50	@	7.00
Fiber	5.50	@	—
Kraft No. 2.....	5.50	@	—

(F. o. b. Cars, Toronto)

News per ton—			
Rolls (contract)..$50.00		@	—
Sheets 69.50		@	—

Pulp

Ground wood.....29.00		@	—
Unbleached Sulphite..49.00		@	—
Kraft 50.00		@	—
Soda 54.00		@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut...	2.25	@	—
Soft White.....	2.15	@	—
White Blk. News..	1.25	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	.80	@	—
Light and Crumpled Book Stock.	.70	@	—
Ledgers and Writings	1.10	@	—
Manilas—			
New Manila Cut...	1.35	@	—
Printed Manilas...	.45	@	—
Kraft	.95	@	—
News and Scrap—			
Strictly Overissue.	.50	@	—
Strictly Folded....	.45	@	—
No. 1 Mixed Paper..	.30	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06¾	@	.07
Fancy Shirt Cuttings	.02¼	@	.02½